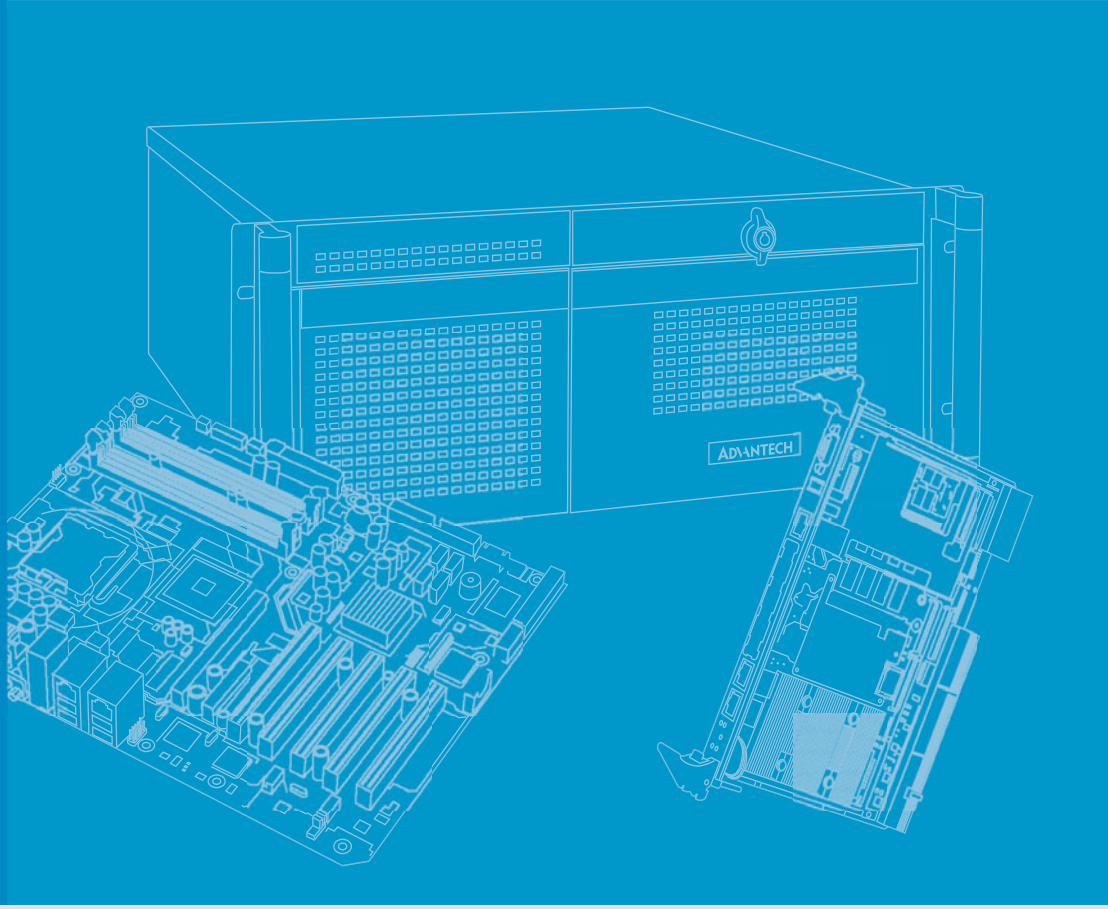

User Manual

DSPC-8661-PCXE

ADVANTECH

Enabling an Intelligent Planet

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Part No. Edition 1

Printed in Taiwan December 2012

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FM

This equipment has passed the FM certification. According to the National Fire Protection Association, work sites are classified into different classes, divisions and groups, based on hazard considerations. This equipment is compliant with the specifications of Class I, Division 2, Groups A, B, C and D indoor hazards.

Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

22. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

Contents

Chapter 1 Introduction.....1

1.1 Introduction 2
1.2 Features 2
1.3 Package Content 2
1.4 Product Specifications 2
1.5 Block Diagram 4
Figure 1.1 Block Diagram 4
1.6 Typical Application 4
Figure 1.2 Typical Application 4
1.7 HW Introduction 5
1.7.1 Dimension 5
Figure 1.3 Top View of DSPC-8661-PCXE 5
Figure 1.4 Bottom View of DSPC-8661-PCXE 6
Figure 1.5 Side View of DSPC-8661-PCXE 6
1.7.2 Input / Output Ports 7
1.8 Optional Accessories 14
1.8.1 JTAG Debug Board (optional) 14
1.8.2 Audio and Loop-out Board (optional) 14
1.8.3 DIO and Control Board (optional) 15

Chapter 2 Linux Demo Program 17

2.1 Introduction 18
2.2 Running PD Demo 18
2.2.1 DSPCI-8661 Hardware settings 18
2.2.2 Boot From Customized Ubuntu disc 19
2.2.3 PCIe card status check 19
2.2.4 Run Demonstration 20

Chapter 3 Windows Driver Installation 23

3.1 For Windows XP 24
3.2 For Windows Vista 27
3.3 For Windows 7 31

Chapter 4 Firmware Loader for Windows 37

Chapter 1

Introduction

1.1 Introduction

Design with TI TMS320DM8168 SoC, DSPC-8661-PCXE is a full-functional video processing platform with 16-ch composite video and audio inputs based on standard half-length PCIe board form factor. The board supports H.264 / MJPEG / RAW encode / decode up to D1 resolution at real-time frame rate (30/25fps) for all channels simultaneously. The HDMI provides up to 1080p 60fps video / audio outputs that fulfills the high-definition display requirements. Equipped with a high-performance C674X Digital Signal Processor (DSP), DSPC-8661-PCXE can afford a system's host processing by executing image enhancement and video analytics programs. The I2C and UART interfaces are designed for extending the control and indicator functions like RS-485 and DIO (on the optional DIO & Control Board). Furthermore, the versatile peripherals of Giga LAN, SATA and USB ports enriches the data communication, storage as well as user interface functions while the device works at standalone mode. With an easy-to-use software development kit (SDK), the DSPC-8661-PCXE is an ideal solution for system integrators to implement diverse video-processing related applications that fits a broad spectrum of customer requirements.

1.2 Features

- Powered by TI TMS320DM8168 SoC
- 16-ch composite video and audio inputs
- H.264 / MJPEG H/W encoding up to 480fps at D1
- H.264 / MJPEG H/W decoding up to 480fps at D1
- One HDMI supports AV display up to 1080p at 60fps
- Embedded with 1.0GHz C674X VLIW DSP
- Versatile peripherals: Giga LAN port, SATA, USB 2.0, I 2 C and UART
- Dual working modes: PCIe device mode and standalone mode
- Half-size form factor and fanless H/W design
- Windows / Linux PC driver and SDK with sample codes

1.3 Package Content

- DSPC-8661-PCXE board x1
- 16xBNC + 8xRCA to DVI octopus cable x1

1.4 Product Specifications

Video Input	
Channels	16
Input Format	Composite for NTSC / PAL
Resolution	Up to D1(720x576)
Compression	H.264 / MJPEG / RAW
Max. Frame Rate	480/400fps (NTSC/PAL) at D1
Bit Rate Control	CBR & VBR
Connector	DVI x1 (for connecting 16x BNC + 8xRCA octopus cable). Pin Header x1 (alternative for 16-ch video + 8-ch audio inputs)

Audio Input	
Channels	8 + 8 (optional)
Format	Raw
Sampling Rate	Up to 16bit, 44KHz
Connector	DVI x1 (8-ch audio shared with video input connector) Pin Header x1 (for connecting the optional Audio & Loop-out Board; supports the other 8ch audio-in)
Video Output	
RCA	1
Loop-out	16-ch Pin Header on board (connecting to the optional Audio & Loop-out Board)
HDMI out	1, resolution up to 1080p, frame rate up to 60 fps
Peripherals	
Giga Lan Port	RJ45 x1
USB 2.0 Port	A-type Female x1
SATA Port	x1 (3.0 Gbps)
I^2C and UART	Pin-header x1 for connecting the optional DIO and Control Board
Data Bus	PCIe Express 2.0, Gen2, x1
Accessories	
Cable	16xBNC + 8xRCA to DVI Octopus Cable
Expansion Board (optional)	JTAG Debug Board Audio & Loop-out Board DIO & Control Board
Physical Characteristics	
Power Consumption	< 26 W
Operating Temperature	-20 ~ 70° C / -4 ~158° F (with air flow)
Dimensions	140 x 111.15mm / 5.51” x 4.38”
Software	
Supported OS by driver	Windows XP / XPe / Vista / 7, Linux
SDK	User’s Manual, Programming Guide, Sample Codes
Demo Program	16-ch Video Capturing and H.264 Encoding at PCIe Device Mode
Applications	
PCIe Device Mode	PCIe digital video capturing & encoding card PCIe video decoder card with HDMI out PCIe DSP-based intelligent video analytic card
Standalone Mode	Embedded IP video encoder / video recorder Embedded IP video decoder with HDMI out Embedded IP intelligent video analytic box

1.5 Block Diagram

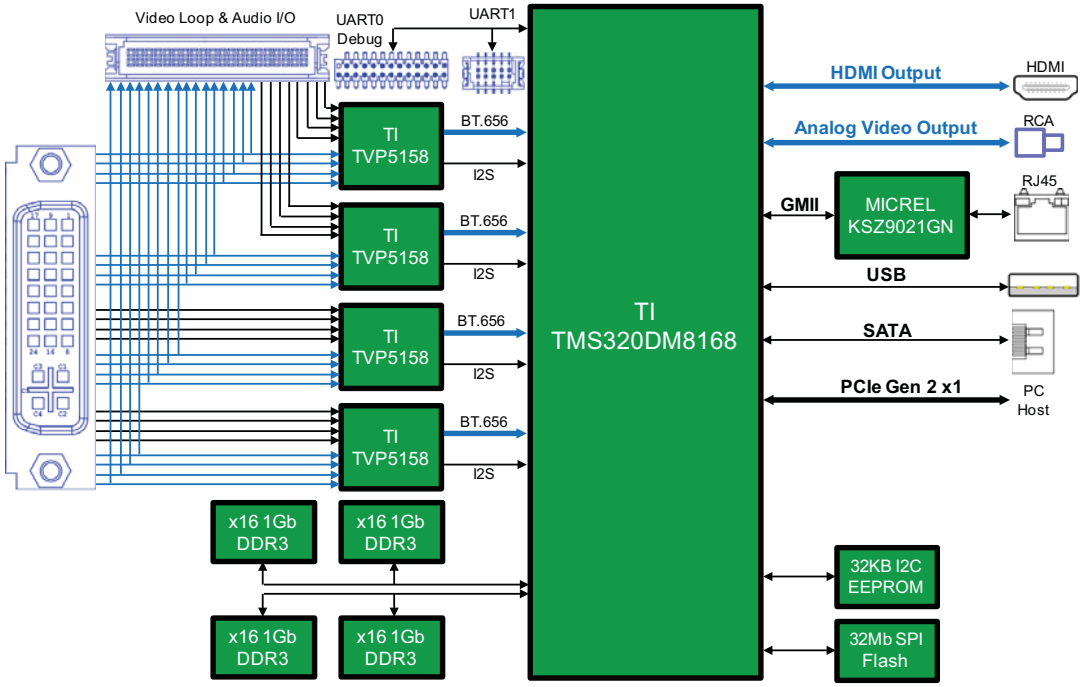


Figure 1.1 Block Diagram

1.6 Typical Application

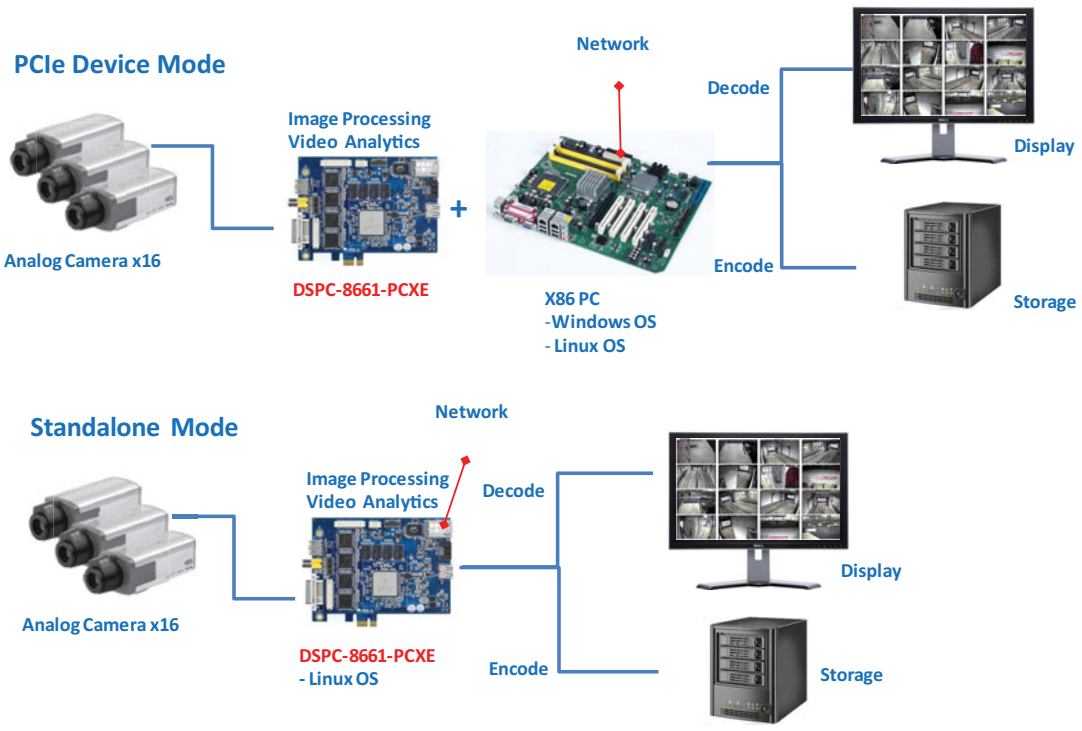


Figure 1.2 Typical Application

1.7 HW Introduction

1.7.1 Dimension

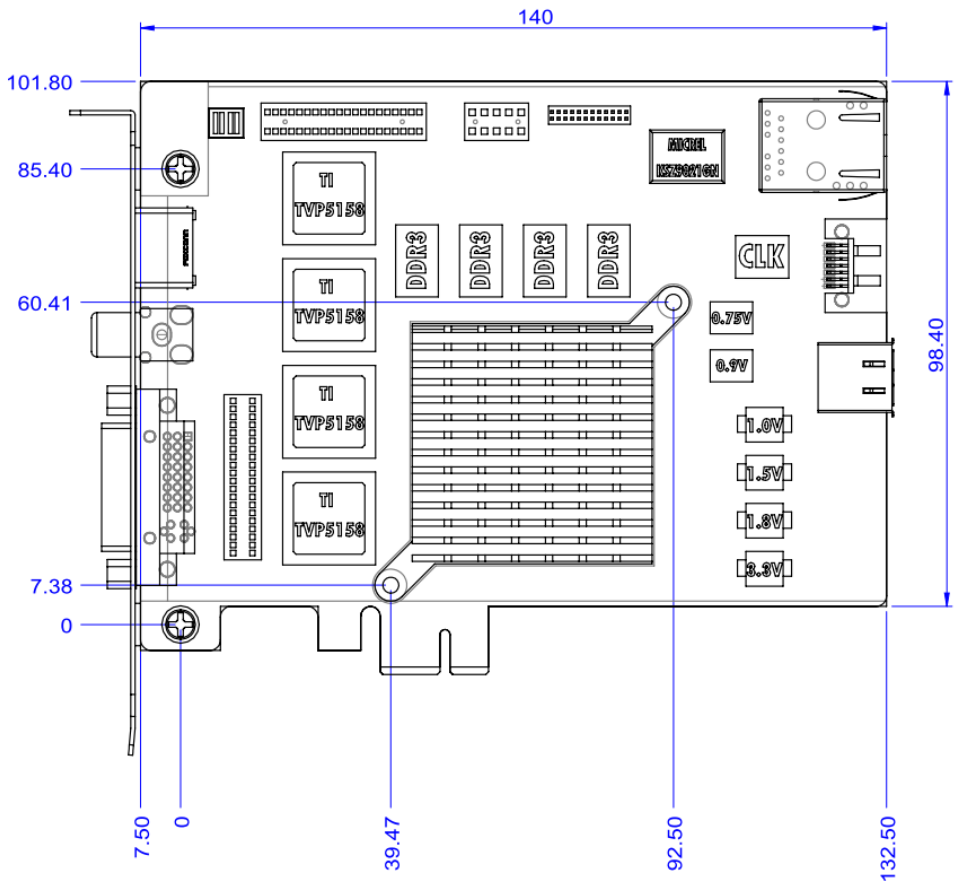


Figure 1.3 Top View of DSPC-8661-PCXE

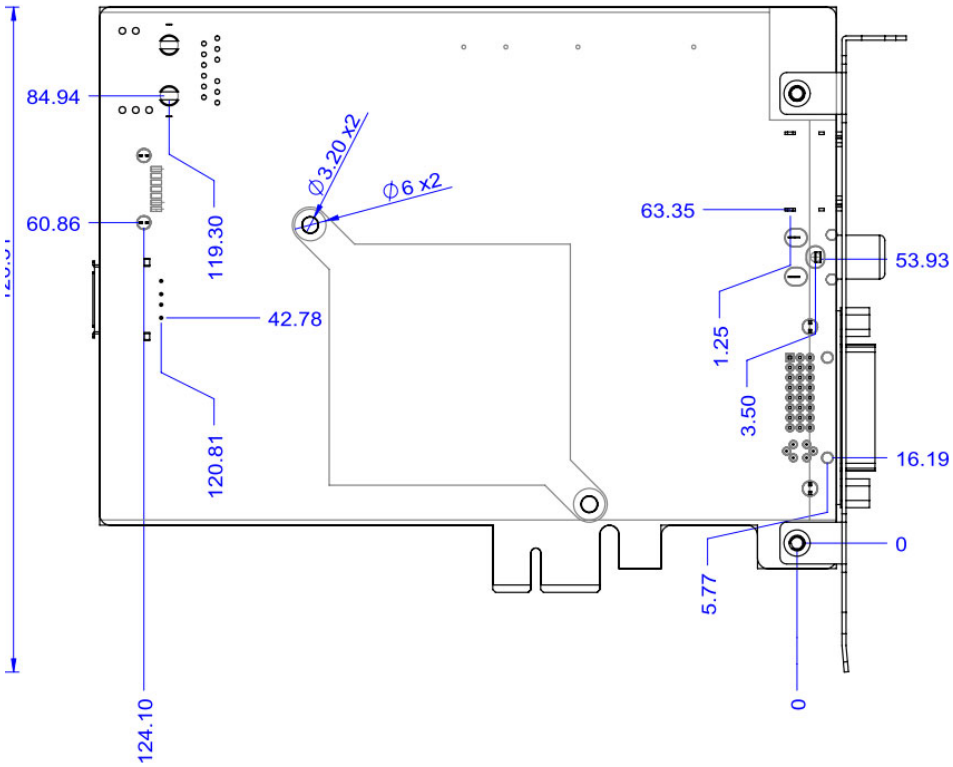


Figure 1.4 Bottom View of DSPC-8661-PCXE

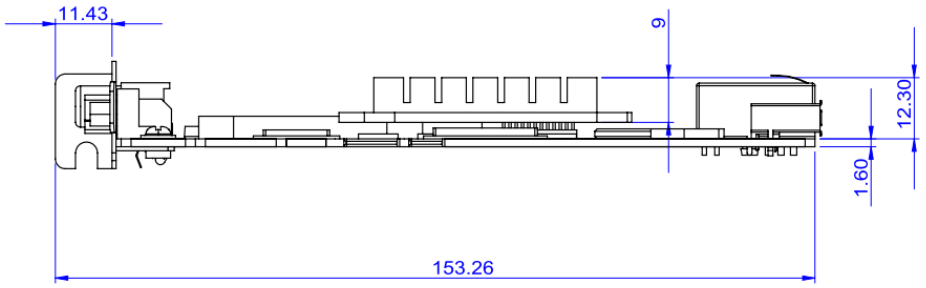
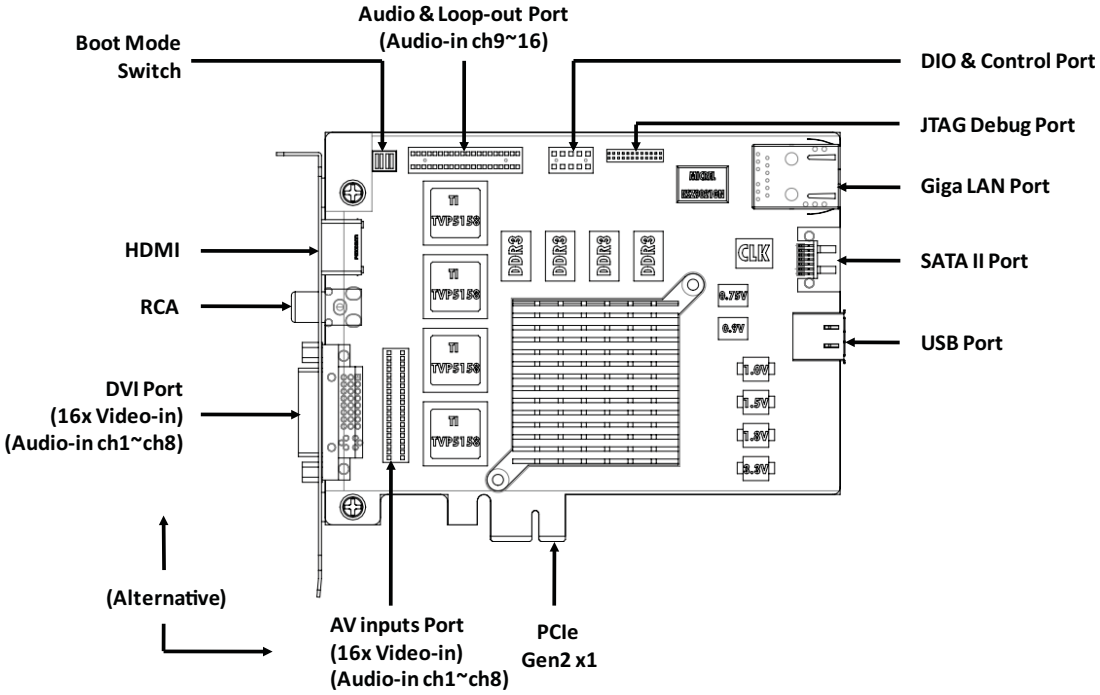


Figure 1.5 Side View of DSPC-8661-PCXE

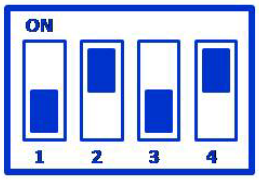
1.7.2 Input / Output Ports



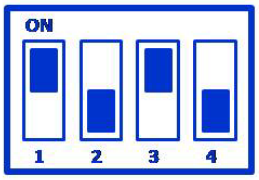
1.7.2.1 Boot Mode Switch

DSPC-8661-PCXE supports dual working modes: PCIe device mode and Standalone mode. The Boot Mode Switch is for switching the two boot modes.

PCIe boot (PCIe device mode): 1:OFF , 2:ON, 3:OFF , 4:ON (default)

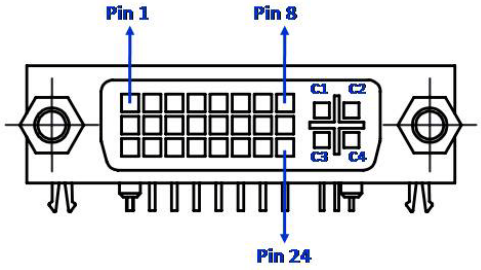


NAND Flash boot (Standalone Mode): 1:ON , 2:OFF, 3:ON , 4:OFF
(A boot code for 3rd party program development in the NAND Flash is needed)



1.7.2.2 DVI Port

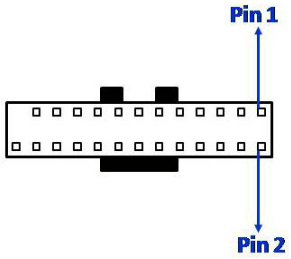
The DVI port connects with the octopus cable for providing 16ch Video + 8ch Audio inputs (ch1~ch8).



Pin number	Pin signal	Pin number	Pin signal
1	VIDEO_IN1	13	VIDEO_IN13
2	VIDEO_IN2	14	VIDEO_IN14
3	VIDEO_IN3	15	VIDEO_IN15
4	VIDEO_IN4	16	VIDEO_IN16
5	VIDEO_IN5	17	AUDIO_IN1
6	VIDEO_IN6	18	AUDIO_IN2
7	VIDEO_IN7	19	AUDIO_IN3
8	VIDEO_IN8	20	AUDIO_IN4
9	VIDEO_IN9	21	AUDIO_IN5
10	VIDEO_IN10	22	AUDIO_IN6
11	VIDEO_IN11	23	AUDIO_IN7
12	VIDEO_IN12	24	AUDIO_IN8

1.7.2.3 JTAG Debug Port

The JTAG debug port connects with the JTAG debug board (optional) for software programming and debugging.

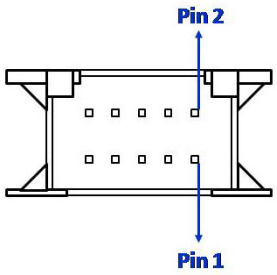


Pin number	Pin signal	Pin number	Pin signal
1	TMS	2	TRSTn
3	TDI	4	GND
5	VCC_3V3	6	
7	TDO	8	GND
9	RTCK	10	GND
11	TCK	12	GND
13	EMU0	14	EMU1
15	EMU_RSTn	16	GND
17	EMU2	18	EMU3
19	EMU4	20	GND
21	NA	22	NA
23	UART_RXD	24	UART_TXD
25		26	VCC_3V3

1.7.2.4 DIO & Control Port

The DIO & control port connects with the DIO & control board (optional) through I2C and UART for providing:

- 16x DI + 8x DO
- RS485

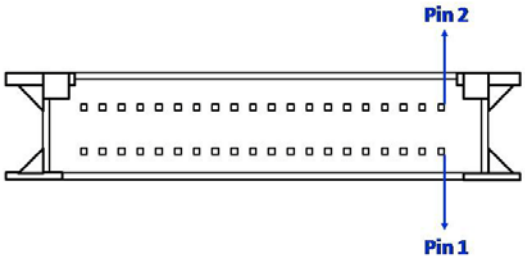


Pin number	Pin signal	Pin number	Pin signal
1	UART1_TXD	2	VCC_5V
3	UART1_RXD	4	VCC_5V
5	RS485_DIR	6	GND
7	IIC1_SCL	8	VCC_3V3
9	IIC1_SDA	10	9555_INTn

1.7.2.5 Audio and Loop-out Port

The audio & loop-out port connects with the audio & loop-out board (optional) for providing:

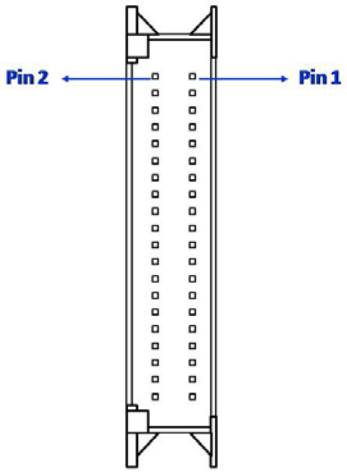
- Audio line-in, line-out and microphone-in
- 8-ch audio-in (ch9~ch16)
- 16-ch video loop-out.



Pin number	Pin signal	Pin number	Pin signal
1	VCC_3V3	2	VCC_1V8
3	V_loop_1	4	AUDIO_IN9
5	V_loop_2	6	AUDIO_IN10
7	V_loop_3	8	AUDIO_IN11
9	V_loop_4	10	AUDIO_IN12
11	GND	12	GND
13	V_loop_5	14	AUDIO_IN13
15	V_loop_6	16	AUDIO_IN14
17	V_loop_7	18	AUDIO_IN15
19	V_loop_8	20	AUDIO_IN16
21	GND	22	GND
23	V_loop_9	24	V_loop_13
25	V_loop_10	26	V_loop_14
27	V_loop_11	28	V_loop_15
29	V_loop_12	30	V_loop_16
31	GND	32	GND
33	AU_3101_DIN	34	RSTOUTn
35	AU_3101_DOUT	36	AU_3101_MCLK
37	IIC0_SCL	38	AU_3101_BCLK
39	IIC0_SDA	40	AU_3101_WCLK

1.7.2.6 AV inputs Port

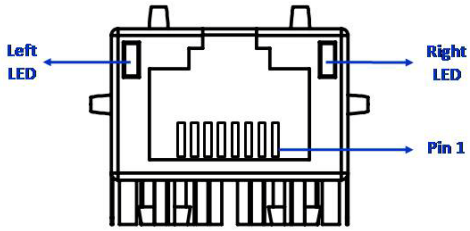
This pin header is an alternative to DVI port for providing 16ch video-in and 8ch audio-in (ch1~ch8) functions. For some application scenarios that the octopus cable is not desired, users can utilize this port for connecting to the BNC connectors and RCA connectors on the brackets directly.



Pin number	Pin signal	Pin number	Pin signal
1	GND	2	GND
3	VIDEO_IN5	4	AUDIO_IN1
5	VIDEO_IN6	6	AUDIO_IN2
7	GND	8	GND
9	VIDEO_IN7	10	AUDIO_IN3
11	VIDEO_IN8	12	AUDIO_IN4
13	GND	14	GND
15	VIDEO_IN9	16	AUDIO_IN5
17	VIDEO_IN10	18	AUDIO_IN6
19	GND	20	GND
21	VIDEO_IN11	22	AUDIO_IN7
23	VIDEO_IN12	24	AUDIO_IN8
25	GND	26	GND
27	VIDEO_IN13	28	GND
29	VIDEO_IN14	30	VIDEO_IN1
31	GND	32	VIDEO_IN2
33	VIDEO_IN15	34	GND
35	VIDEO_IN16	36	VIDEO_IN3
37	GND	38	VIDEO_IN4
39	GND	40	GND

1.7.2.7 Giga LAN Port

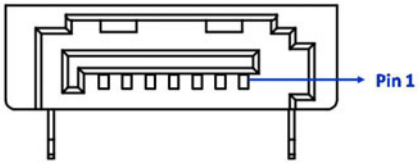
The Giga LAN port is a standard RJ45 connector for providing Ethernet function.



Pin number	Pin signal
1	MDI0_P
2	MDI0_N
3	MDI1_P
4	MDI2_P
5	MDI2_N
6	MDI1_N
7	MDI3_P
8	MDI3_N
Left LED	Orange Color LED
Right LED	Green Color LED

1.7.2.8 SATA II Port

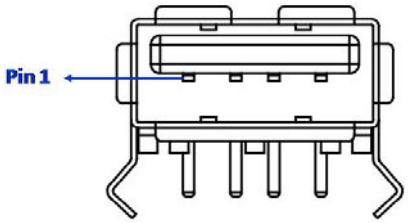
The SATA II Port is a standard SATA connector for providing data storage functions



Pin number	Pin signal
1	GND
2	CON.SATA_TXP0
3	CON.SATA_TXN0
4	GND
5	CON.SATA_RXN0
6	CON.SATA_RXP0
7	GND

1.7.2.9 USB Port

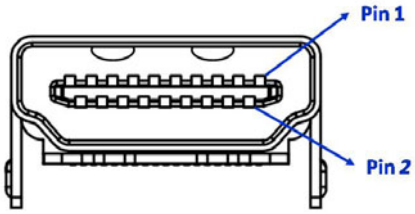
The USB port is a standard type A female USB connector for providing USB OTG functions.



Pin number	Pin signal
1	USB0_VBUS_CONN
2	USB0_DN
3	USB0_DP
4	GND

1.7.2.10 HDMI

This standard HDMI connector is for connecting with monitor / display devices for providing high definition video output functions.



Pin number	Pin signal	Pin number	Pin signal
1	HDMI_TMDSDP2	11	GND
2	GND	12	HDMI_TMDSCLKN
3	HDMI_TMDSDN2	13	HDMI0_CEC_C
4	HDMI_TMDSDP1	14	GND
5	GND	15	HDMI0_DCLK_C
6	HDMI_TMDSDN1	16	HDMI0_DSDA_C
7	HDMI_TMDSDP0	17	GND
8	GND	18	HDMI0_CN_5V
9	HDMI_TMDSDN0	19	HDMI0_HPD_C
10	HDMI_TMDSCLKP		

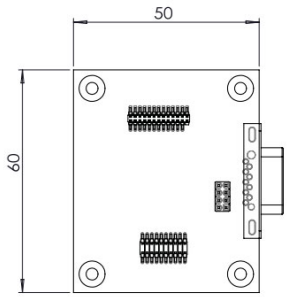
1.7.2.11 RCA

The RCA connector is for connecting with monitor / display devices for provide standard definition video output functions.

1.8 Optional Accessories

1.8.1 JTAG Debug Board (optional)

The JTAG debug board (P/N: DSPC8661ACY001-E) is an optional accessory of DSPC-8661-PCXE for monitoring the board operating status and FW/SW programming. A board-to-board flat cable is attached.

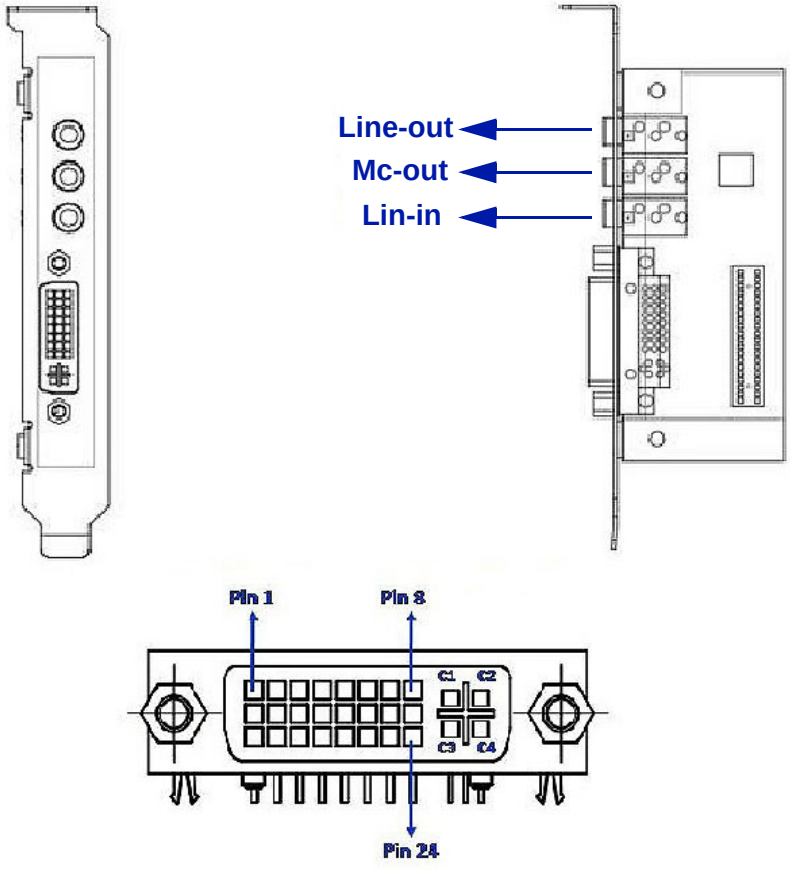


1.8.2 Audio and Loop-out Board (optional)

The Audio and Loop-out Board (P/N: DSPC8661ACY002-E) is an optional accessory of DSPC-8661-PCXE for providing:

- Audio line-out, Mic-out and Line-in by phone jack
- Video loop-out ch1 ~ch16
- Audio in ch9 ~ ch16

A 16xBNC+8xRCA to DVI cable and a board-to-board flat cable are attached.



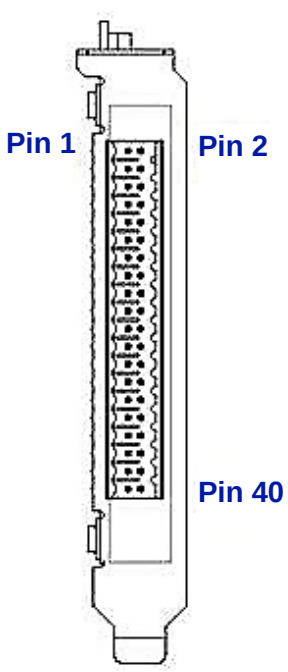
Pin number	Pin signal	Pin number	Pin signal
1	Video_Loop1	16	Video_Loop16
2	Video_Loop2	17	Audio_9
3	Video_Loop3	18	Audio_10
4	Video_Loop4	19	Audio_11
5	Video_Loop5	20	Audio_12
6	Video_Loop6	21	Audio_13
7	Video_Loop7	22	Audio_14
8	Video_Loop8	23	Audio_15
9	Video_Loop9	24	Audio_16
10	Video_Loop10		
11	Video_Loop11		
12	Video_Loop12	C1	GND
13	Video_Loop13	C2	GND
14	Video_Loop14	C3	GND
15	Video_Loop15	C4	GND

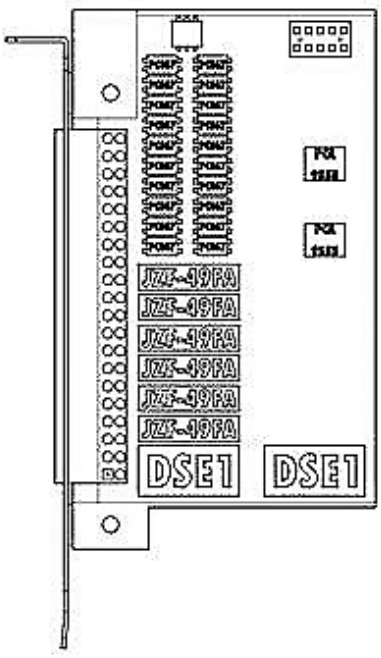
1.8.3 DIO and Control Board (optional)

The DIO and Control Board (P/N: DSPC8661ACY003-E) is an optional accessory of DSPC-8661-PCXE for providing:

- 16x digital input
- 8x digital output (relay)
- RS485

A board-to-board flat cable is attached.





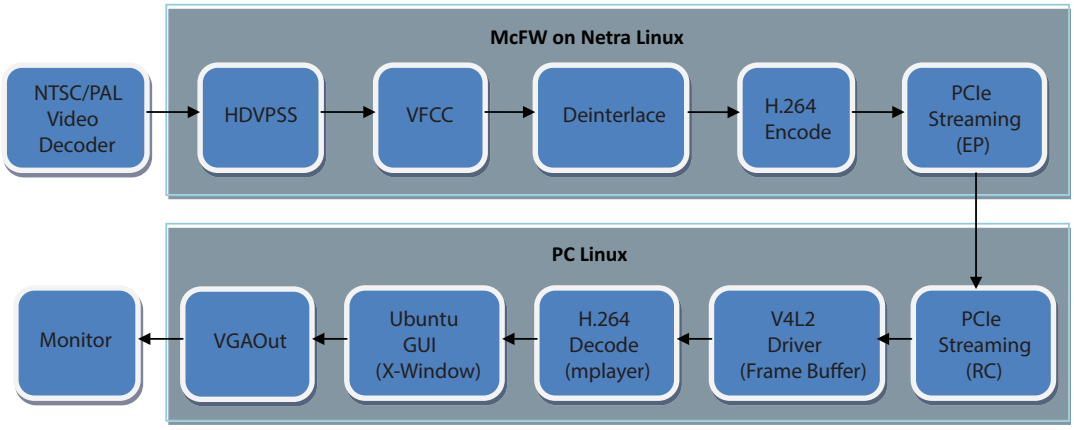
Pin number	Pin signal	Pin number	Pin signal
1	7 COM	21	
2	7 NC	22	GND
3	7 NO	23	+5V
4	8 NC	24	GND
5	8 NO	25	Alarm in 15
6	8 COM	26	Alarm in 16
7	6 COM	27	Alarm in 13
8	6 NO	28	Alarm in 14
9	5 COM	29	Alarm in 11
10	5 NO	30	Alarm in 12
11	4 COM	31	Alarm in 09
12	4 NO	32	Alarm in 10
13	3 COM	33	Alarm in 07
14	3 NO	34	Alarm in 08
15	2 COM	35	Alarm in 05
16	2 NO	36	Alarm in 06
17	1 COM	37	Alarm in 03
18	1 NO	38	Alarm in 04
19	+485	39	Alarm in 01
20	-485	40	Alarm in 02

Chapter 2

Linux Demo Program

2.1 Introduction

This chapter describes how to set up the software demonstration for DSPC-8661-PCXE (abbreviated as DSPC-8661 below) board. It will show you how to use the hardware and run demo software. The release package includes Ubuntu 10.04.3 LTS Customized ISO image with DSPCI-8661 Linux driver. The guide details the steps to setup the hardware and run the demo. Please follow the steps in sequence to get the demonstration working on your PC platform.

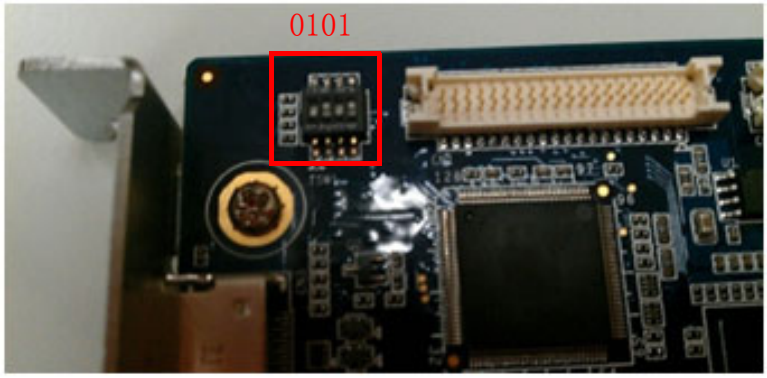


2.2 Running PD Demo

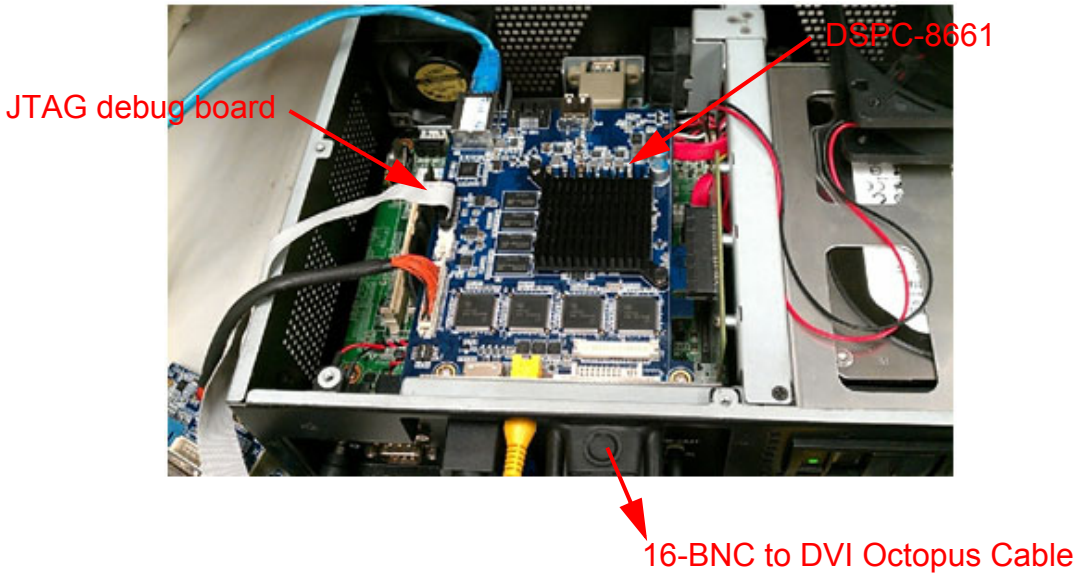
2.2.1 DSPCI-8661 Hardware settings

The required peripherals on PCIE card for software demonstration include:

1. The boot mode switch (TSW1) should be set as PCIE device mode : 0101.



2. Connect to input source you want.
3. Connect with JTAG debug board for UART message and JTAG function (optional).
4. COM port cable (or USB-to-COM cable, optional).
5. Insert DSPC-8661 into your PC PCIE slot and ready for boot, as shown in below.



2.2.2 Boot From Customized Ubuntu disc

Please download the “DSPC-8661-PCXE Linux SDK + Live Linux Demo” data from Advantech “Support & Download” web page and save in the hard disk. Setting PC to boot from this bootable device with ISO image and chose “Try Ubuntu without installing” in boot menu. Demo will run on this OS. Pre-built DSPC-8661 Linux driver will be loaded after booting into Ubuntu.

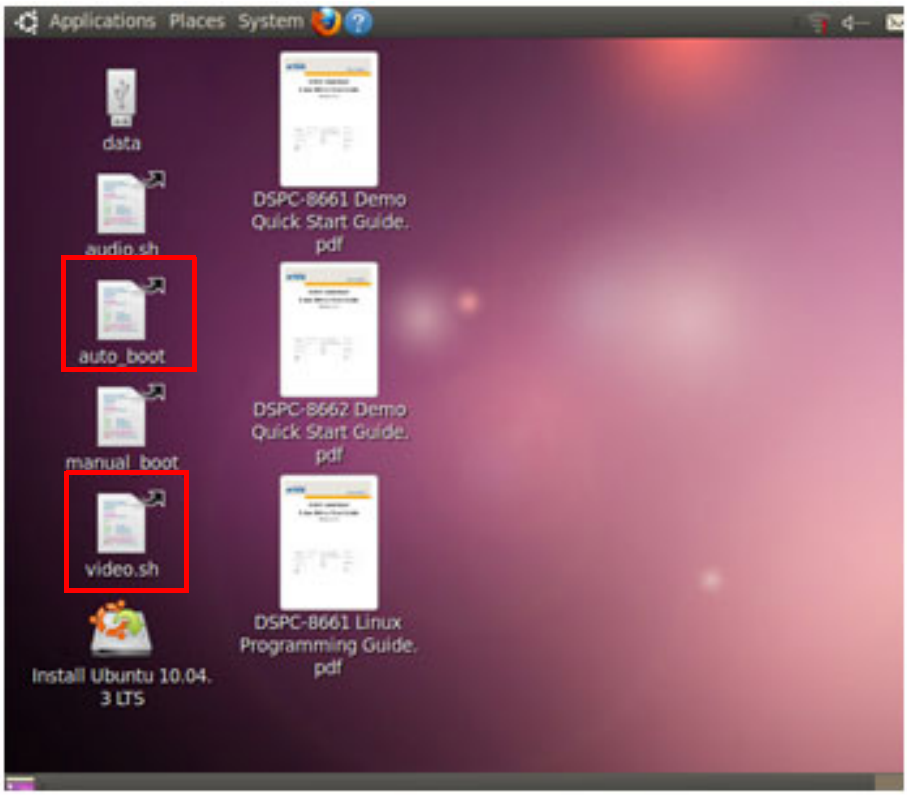
2.2.3 PCIe card status check

Before running the demonstration, you could use following command in Terminal to check the installation. PCI utility will show the information for DSPC-8661 and the driver in use.

```
$ sudo lspci-v-d :b800
02:00.0 Non-VGA unclassified device: Texas Instruments Device
b800 (rev 01)
Flags: bus master, fast devsel, latency 0, IRQ 16
Memory at feaff000 (32-bit, non-prefetchable) [size=4K]
Memory at fd800000 (32-bit, prefetchable) [size=8M]
Memory at fd000000 (32-bit, prefetchable) [size=8M]
Memory at <unassigned> (32-bit, prefetchable)
Capabilities: [40] Power Management version 3
Capabilities: [50] Message Signalled Interrupts: Mask- 64bit+
Queue=0/0 Enable-
Capabilities: [70] Express Endpoint, MSI 00
Capabilities: [100] Advanced Error Reporting <?>
Kernel driver in use: ti81xx
Kernel modules: ti816x_pcie
```

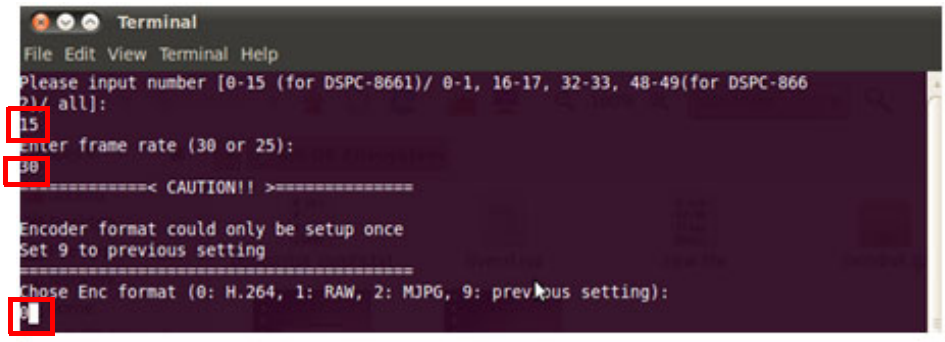
2.2.4 Run Demonstration

After booting into Ubuntu, double-click ***auto_boot*** in desktop and chose “Run in Terminal”, it might take 10 seconds to wait on-board firmware running. Then double-click ***video.sh*** in desktop and chose “Run in Terminal” to start demo.

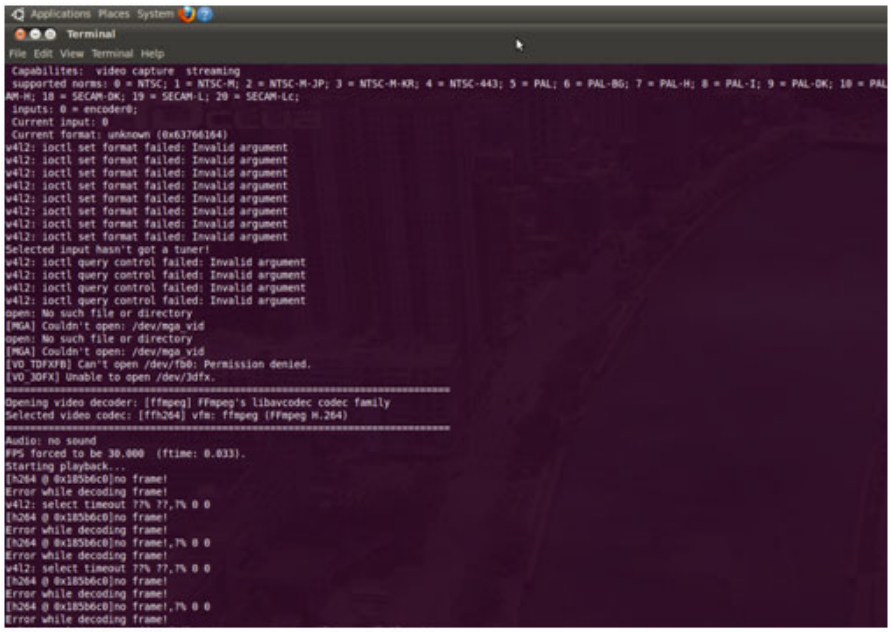


User could set the arguments, channel , frame rate and format, after executing video.sh script. Set “all” to capture all channels and ‘0-15’ for individually channel. Frame rate depends on the format of the video source: 25 for PAL, 30 for NTSC.

And set encode format: 0= H264; 1=RAW ;2=MJPEG ; 9=previous setting.


Terminal
File Edit View Terminal Help
Please input number [0-15 (for DSPC-8661)/ 0-1, 16-17, 32-33, 48-49(for DSPC-866
2)/ all]:
15
Enter frame rate (30 or 25):
30
==========< CAUTION!! >==========
Encoder format could only be setup once
Set 9 to previous setting
==========
Chose Enc format (0: H.264, 1: RAW, 2: MJPG, 9: previous setting):
9

After arguments setting the terminal will show decoding error message until PCIe on-board firmware is running, as shown in below.


Applications Places System
Terminal
File Edit View Terminal Help
Capabilites: video capture streaming
supported norms: 0 = NTSC; 1 = NTSC-M; 2 = NTSC-M-JP; 3 = NTSC-M-KR; 4 = NTSC-443; 5 = PAL; 6 = PAL-BG; 7 = PAL-H; 8 = PAL-I; 9 = PAL-DK; 10 = PAL
AM-H; 18 = SECAM-DK; 19 = SECAM-L; 20 = SECAM-Lc;
inputs: 0 = encoder0;
Current input: 0
Current format: unknown (0x63766164)
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
v4l2: ioctl set format failed: Invalid argument
Selected input hasn't got a tuner!
v4l2: ioctl query control failed: Invalid argument
v4l2: ioctl query control failed: Invalid argument
v4l2: ioctl query control failed: Invalid argument
v4l2: ioctl query control failed: Invalid argument
open: No such file or directory
[MGA] Couldn't open: /dev/mga_vid
open: No such file or directory
[MGA] Couldn't open: /dev/mga_vid
[VO_TDFXFB] Can't open /dev/fb0: Permission denied.
[VO_3DFX] Unable to open /dev/3dfx.
Opening video decoder: [ffmpeg] FFmpeg's libavcodec codec family
Selected video codec: [ffh264] vfm: ffmpeg (FFmpeg H.264)
Audio: no sound
FPS forced to be 30.000 (ftime: 0.033).
Starting playback...
[h264 @ 0x185b6c0]no frame!
Error while decoding frame!
v4l2: select timeout ??% ??,?% 0 0
[h264 @ 0x185b6c0]no frame!
Error while decoding frame!
[h264 @ 0x185b6c0]no frame!,?% 0 0
Error while decoding frame!
v4l2: select timeout ??% ??,?% 0 0
[h264 @ 0x185b6c0]no frame!
Error while decoding frame!
[h264 @ 0x185b6c0]no frame!,?% 0 0
Error while decoding frame!

Multiple Mplayer windows will pop-out.

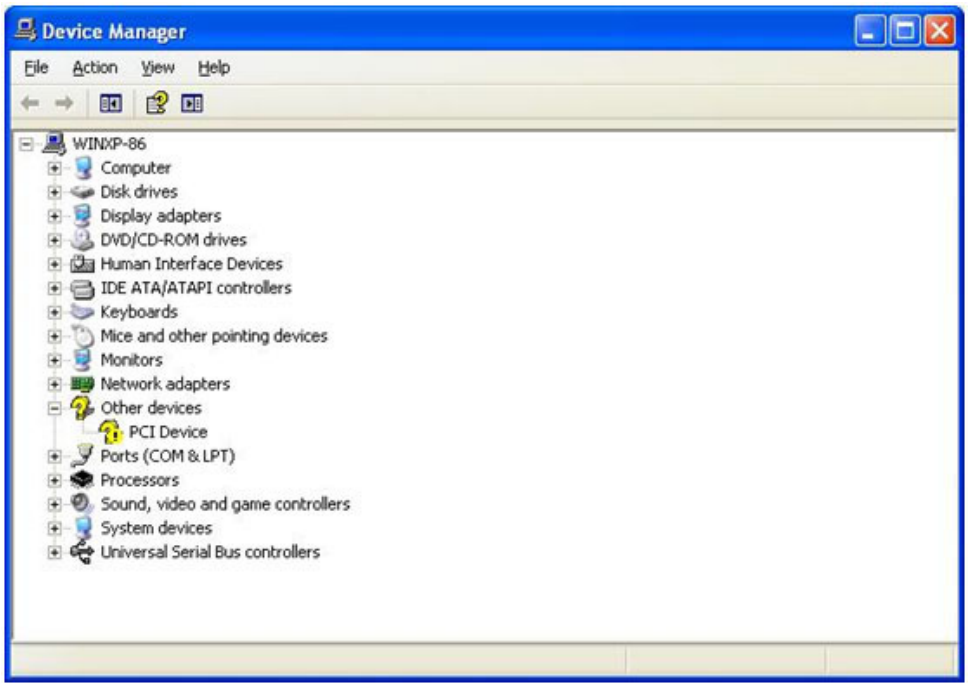
Chapter 3

Windows Driver Installation

- For Windows XP
- For Windows Vista
- For Windows 7

3.1 For Windows XP

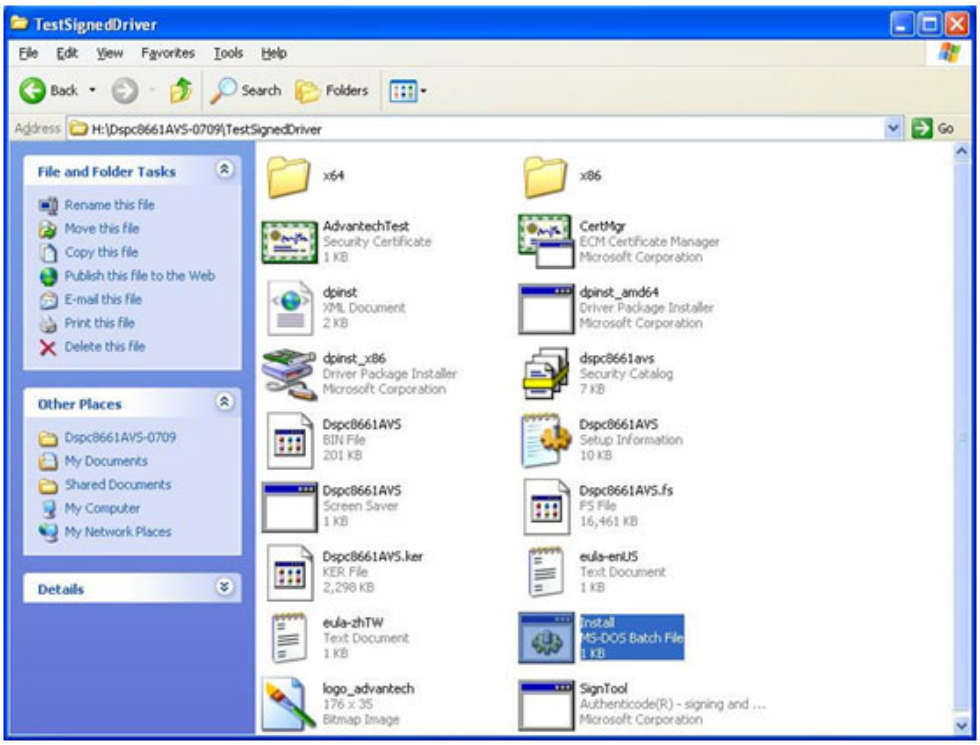
1. Device Found: After DSPC-8661 is plugged into your PC, Windows scans the hardware and finds out DSPC-8661. Open your “Device Manager” and it show as the following figure. If it doesn’t show, or you want to reinstall the driver, please re-scan hardware for DSPC-8661.



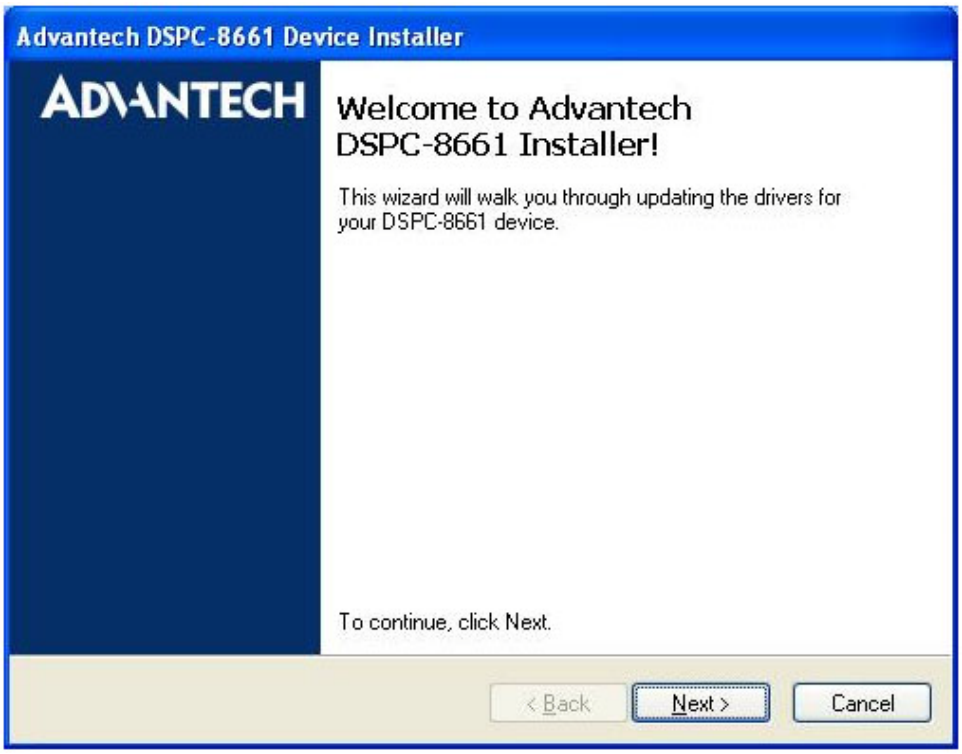
2. If “Found New Hardware Wizard” shows, click on “Cancel” to prevent it from blocking the driver installer. Make sure the wizard is closed, or the installation process fails.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

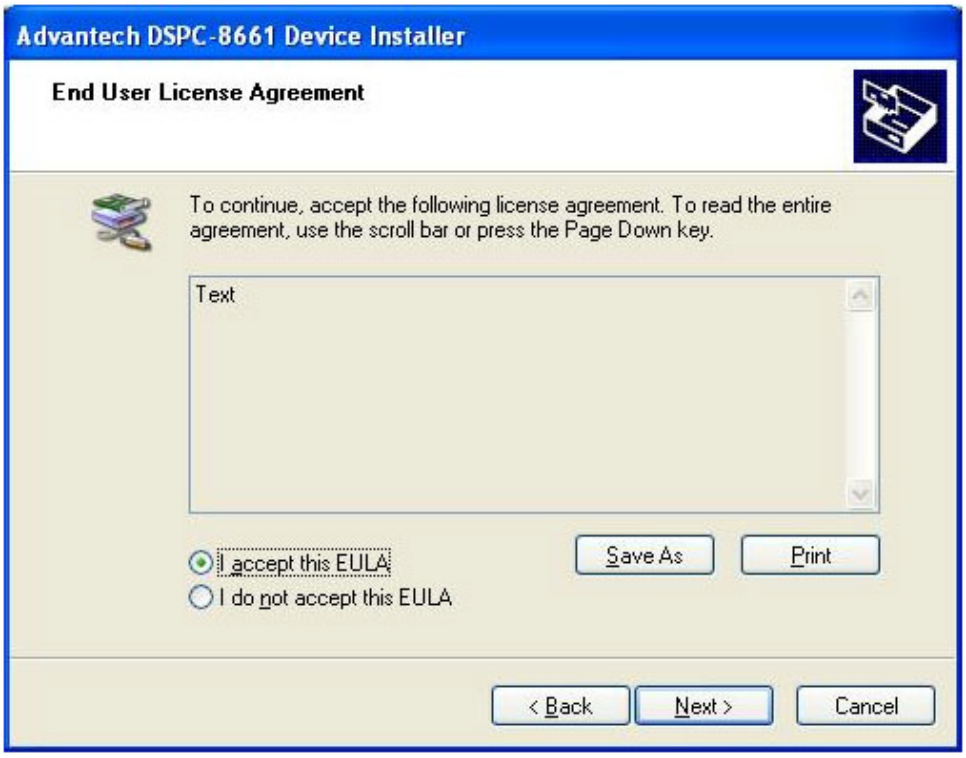
3. Double click on “Install.bat” to begin the installation.



4. Click “Next” when the installation wizard shows.


Advantech DSPC-8661 Device Installer
ADVANTECH
Welcome to Advantech DSPC-8661 Installer!
This wizard will walk you through updating the drivers for your DSPC-8661 device.
To continue, click Next.
< Back
Next >
Cancel

5. Choose “Agree” and click “Next” on EULA step.


Advantech DSPC-8661 Device Installer
End User License Agreement
To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.
Text
I accept this EULA
I do not accept this EULA
Save As
Print
< Back
Next >
Cancel

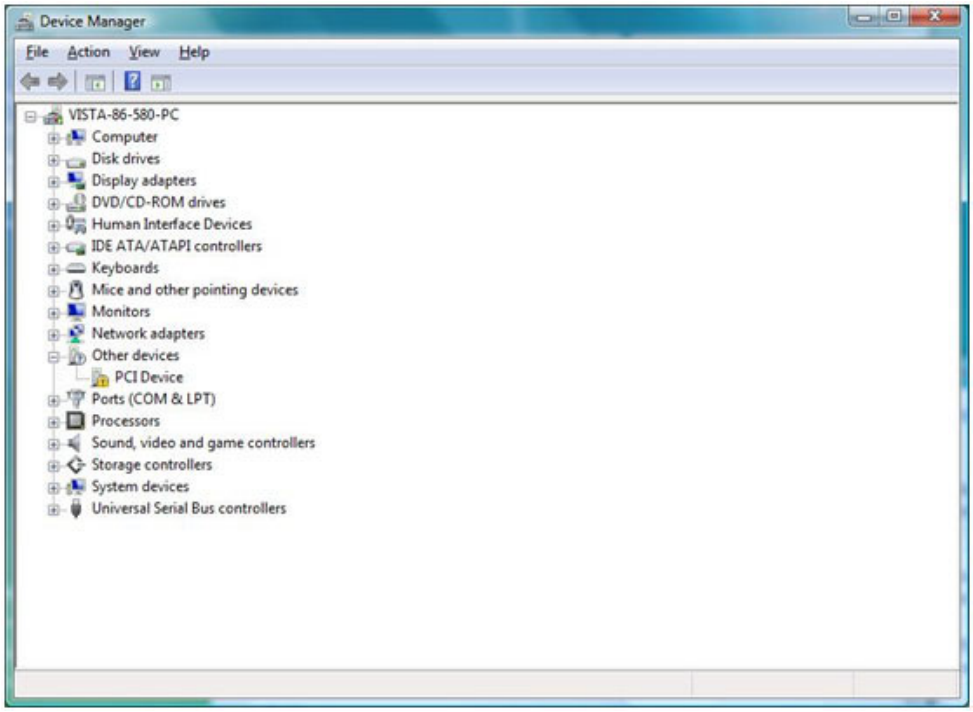
6. The driver wizard proceeds to install.

Advantech DSPC-8661 Device Installer
Installing the software for your DSPC-8661 device...
Please wait while the drivers install. This may take some time to complete.
< Back
Next >
Cancel

7. When the installation successfully completed, click “Finish” to end the installation.

3.2 For Windows Vista

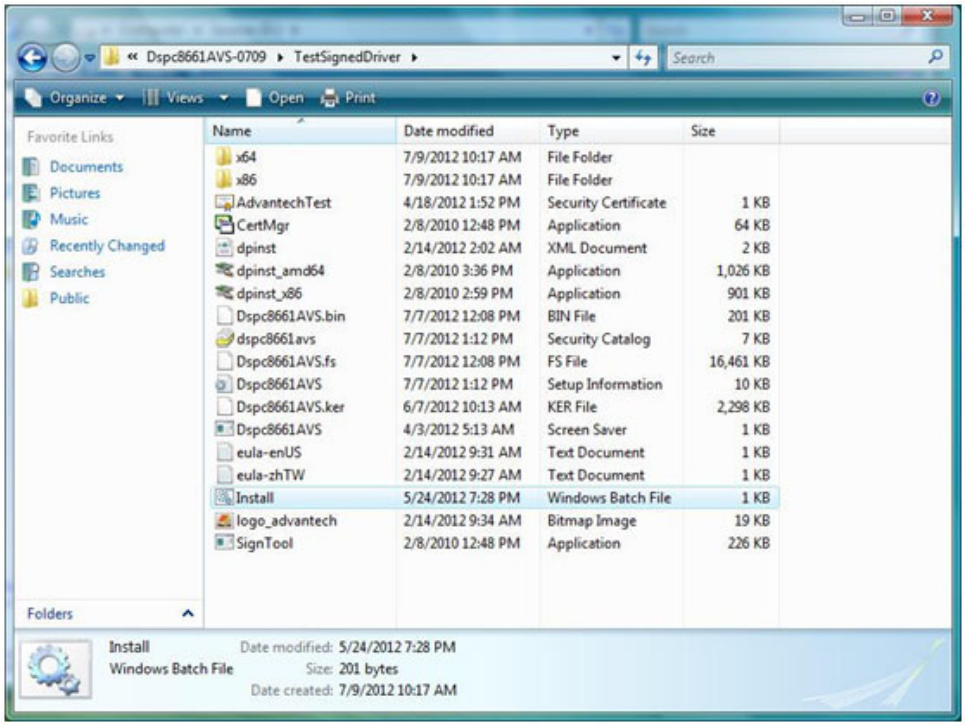
1. Device Found: After DSPC-8661 is plugged into your PC, Windows scans the hardware and finds out DSPC-8661. Open your “Device Manager” and it show as the following figure. If it doesn’t show, or you want to reinstall the driver, please re-scan hardware for DSPC-8661.



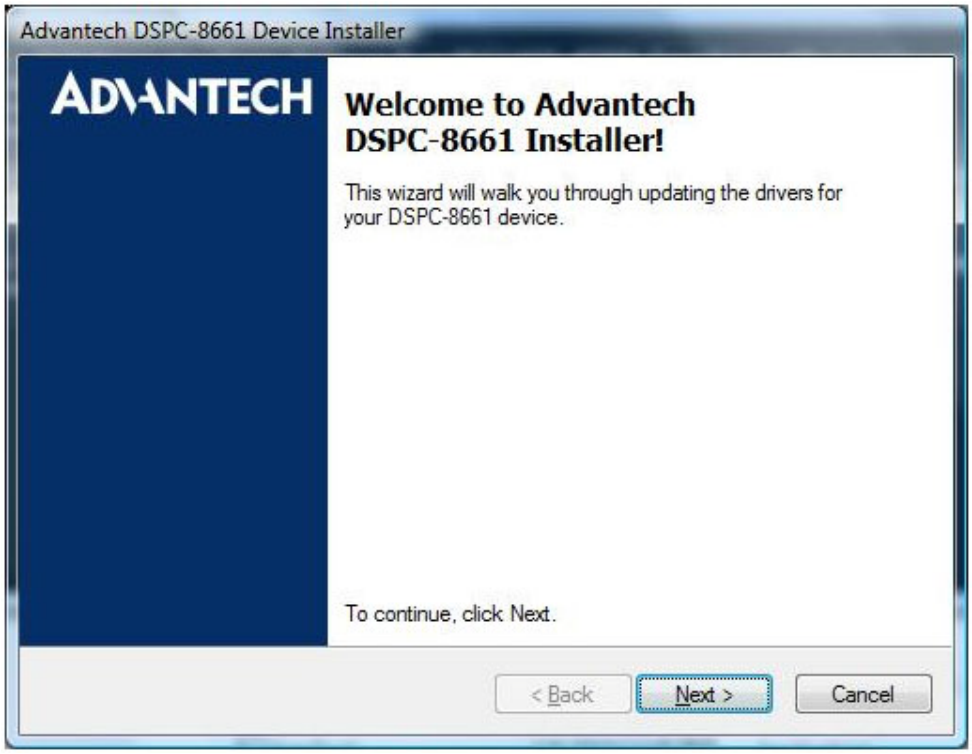
2. If “Found New Hardware Wizard” shows, click on “Cancel” to prevent it from blocking the driver installer. Make sure the wizard is closed, or the installation process fails.

Found New Hardware
Windows needs to install driver software for your PCI Device
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

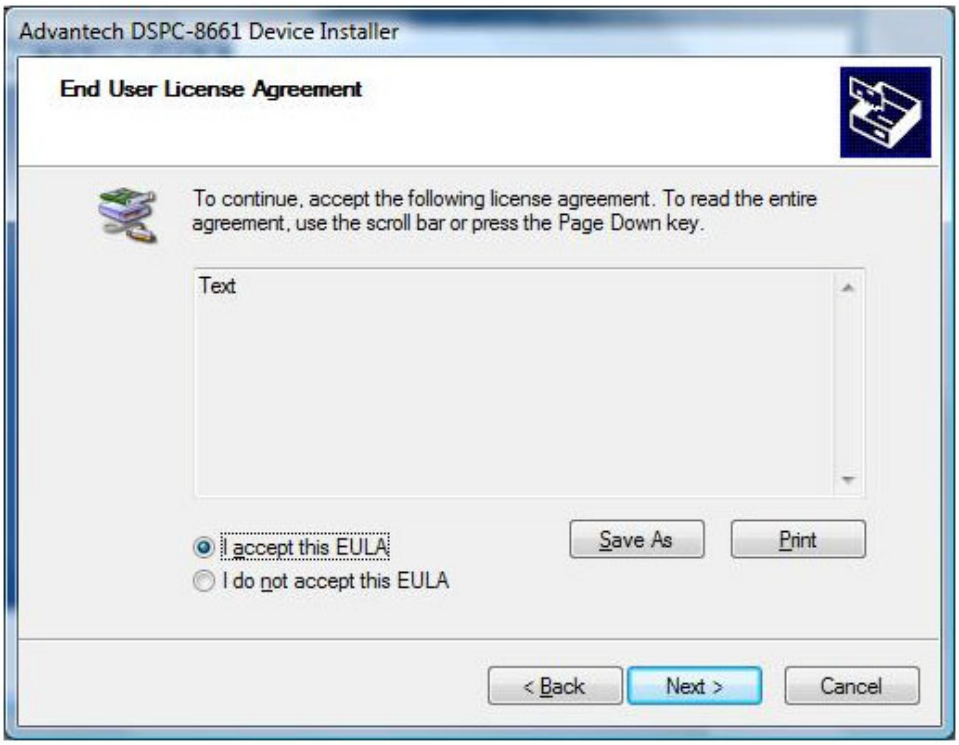
3. Double click on “Install.bat” to begin the installation.


Dspc8661AVS-0709 ▸ TestSignedDriver ▸
Search
Organize
Views
Open
Print
Favorite Links
Documents
Pictures
Music
Recently Changed
Searches
Public
Name
Date modified
Type
Size
x64 7/9/2012 10:17 AM File Folder
x86 7/9/2012 10:17 AM File Folder
AdvantechTest 4/18/2012 1:52 PM Security Certificate 1 KB
CertMgr 2/8/2010 12:48 PM Application 64 KB
dpinst 2/14/2012 2:02 AM XML Document 2 KB
dpinst_amd64 2/8/2010 3:36 PM Application 1,026 KB
dpinst_x86 2/8/2010 2:59 PM Application 901 KB
Dspc8661AVS.bin 7/7/2012 12:08 PM BIN File 201 KB
dspc8661avs 7/7/2012 1:12 PM Security Catalog 7 KB
Dspc8661AVS.fs 7/7/2012 12:08 PM FS File 16,461 KB
Dspc8661AVS 7/7/2012 1:12 PM Setup Information 10 KB
Dspc8661AVS.ker 6/7/2012 10:13 AM KER File 2,298 KB
Dspc8661AVS 4/3/2012 5:13 AM Screen Saver 1 KB
eula-enUS 2/14/2012 9:31 AM Text Document 1 KB
eula-zhTW 2/14/2012 9:27 AM Text Document 1 KB
Install 5/24/2012 7:28 PM Windows Batch File 1 KB
logo_advantech 2/14/2012 9:34 AM Bitmap Image 19 KB
SignTool 2/8/2010 12:48 PM Application 226 KB
Folders
Install
Windows Batch File
Date modified: 5/24/2012 7:28 PM
Size: 201 bytes
Date created: 7/9/2012 10:17 AM

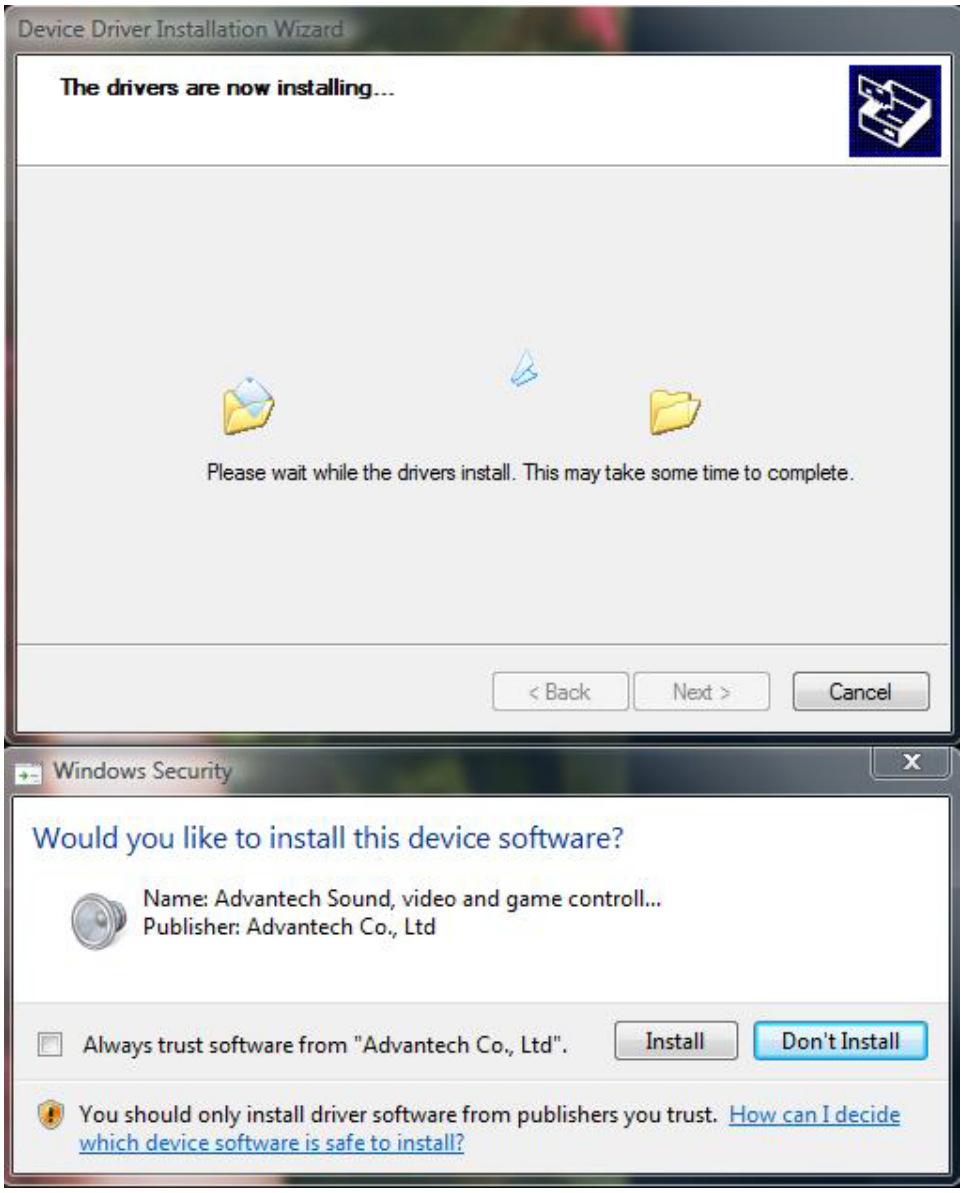
4. Click “Next” when the installation wizard shows.


Advantech DSPC-8661 Device Installer
ADVANTECH
Welcome to Advantech DSPC-8661 Installer!
This wizard will walk you through updating the drivers for your DSPC-8661 device.
To continue, click Next.
< Back
Next >
Cancel

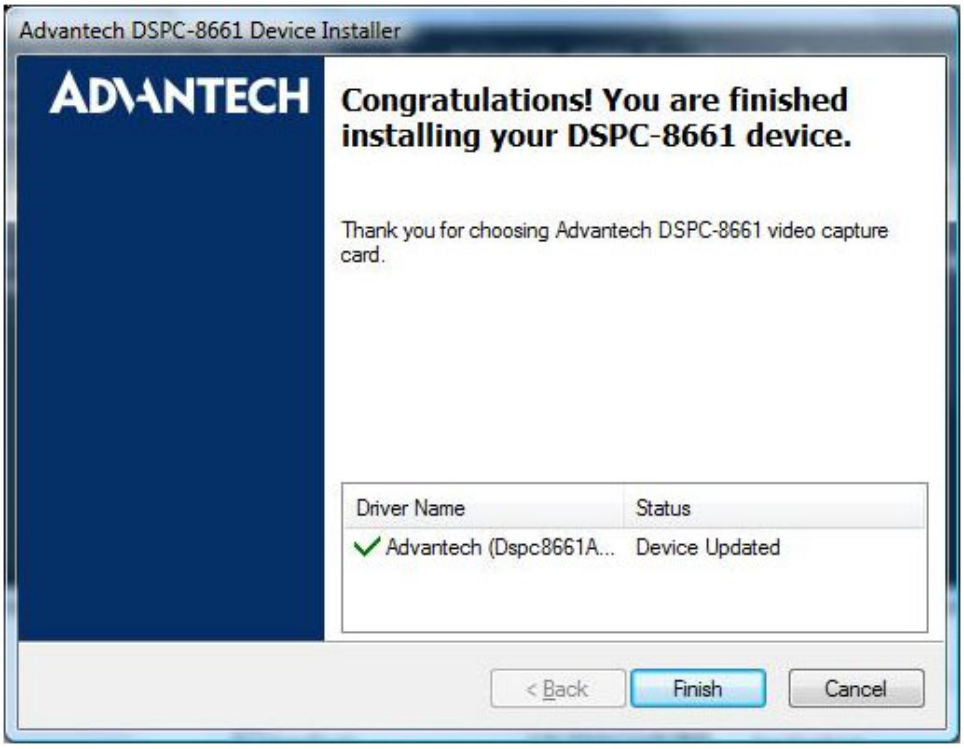
5. Choose “Agree” and click “Next” on EULA step.


Advantech DSPC-8661 Device Installer
End User License Agreement
To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.
Text
I accept this EULA
I do not accept this EULA
Save As
Print
< Back
Next >
Cancel

6. The will show windows Security message, click “Install”. The driver wizard proceeds to install.

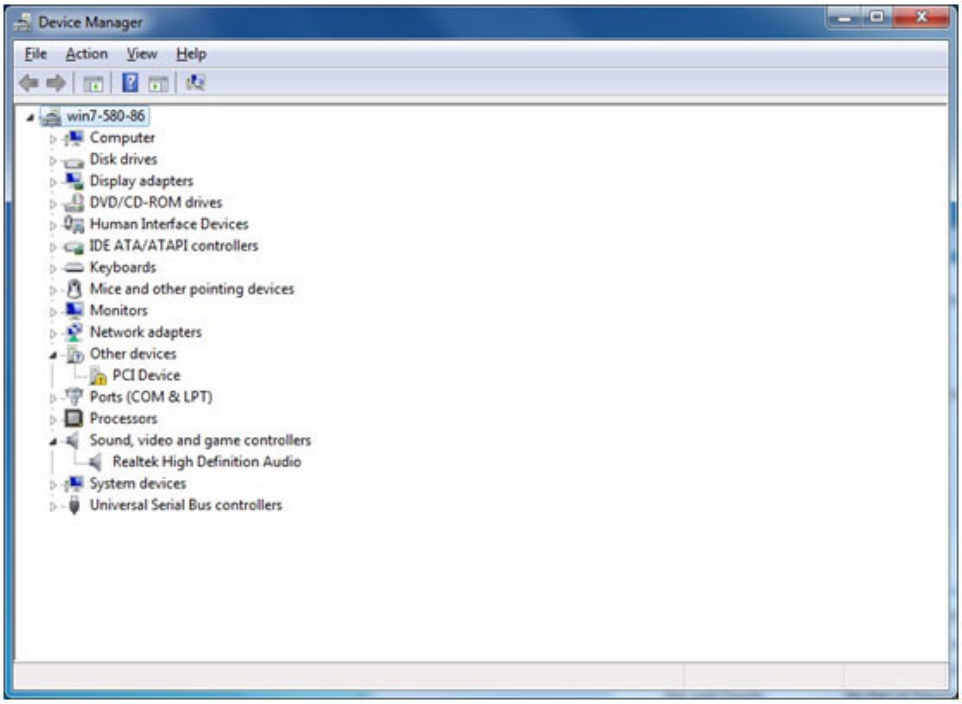

Device Driver Installation Wizard
The drivers are now installing...
Please wait while the drivers install. This may take some time to complete.
< Back
Next >
Cancel
Windows Security
Would you like to install this device software?
Name: Advantech Sound, video and game controll...
Publisher: Advantech Co., Ltd
Always trust software from "Advantech Co., Ltd".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

7. When the installation successfully completed, click “Finish” to end the installation.

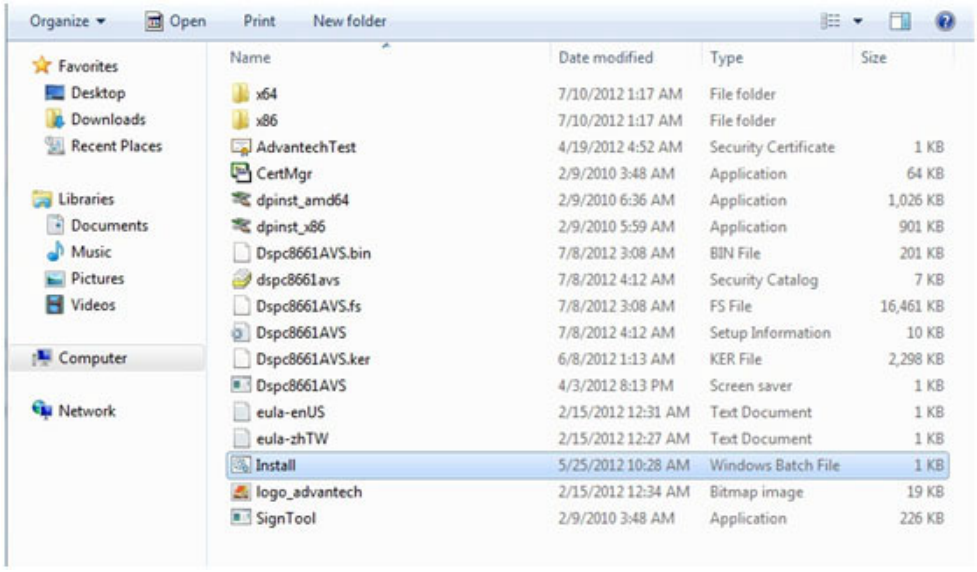


3.3 For Windows 7

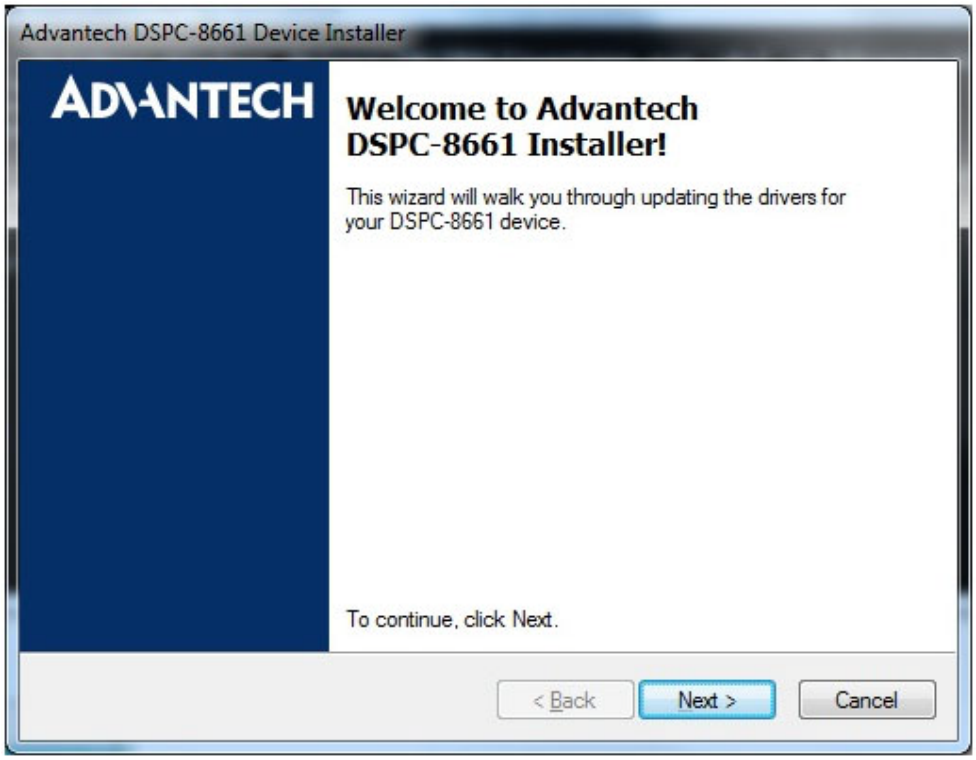
1. Device Found: After DSPC-8661 is plugged into your PC, Windows scans the hardware and finds out DSPC-8661. Open your “Device Manager” and it show as the following figure. If it doesn’t show, or you want to reinstall the driver, please re-scan hardware for DSPC-8661.



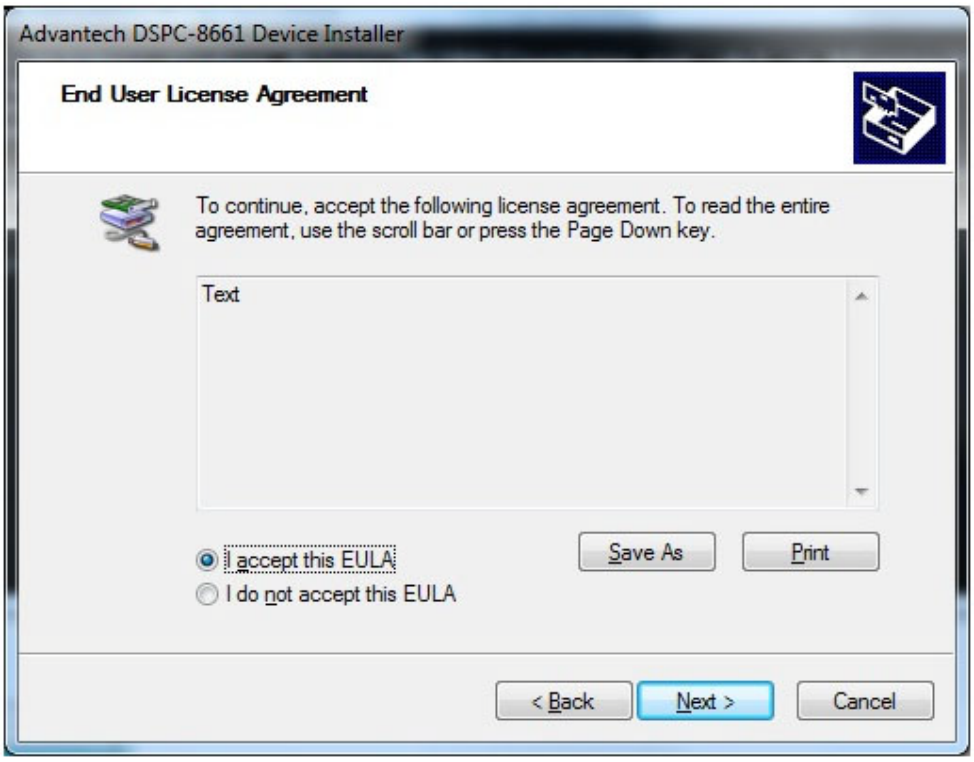
2. Double click on “Install.bat” to begin the installation.


Organize
Open
Print
New folder
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Name
Date modified
Type
Size
x64 7/10/2012 1:17 AM File folder
x86 7/10/2012 1:17 AM File folder
AdvantechTest 4/19/2012 4:52 AM Security Certificate 1 KB
CertMgr 2/9/2010 3:48 AM Application 64 KB
dpinst_amd64 2/9/2010 6:36 AM Application 1,026 KB
dpinst_x86 2/9/2010 5:59 AM Application 901 KB
Dspc8661AVS.bin 7/8/2012 3:08 AM BIN File 201 KB
dspc8661avs 7/8/2012 4:12 AM Security Catalog 7 KB
Dspc8661AVS.fs 7/8/2012 3:08 AM FS File 16,461 KB
Dspc8661AVS 7/8/2012 4:12 AM Setup Information 10 KB
Dspc8661AVS.ker 6/8/2012 1:13 AM KER File 2,298 KB
Dspc8661AVS 4/3/2012 8:13 PM Screen saver 1 KB
eula-enUS 2/15/2012 12:31 AM Text Document 1 KB
eula-zhTW 2/15/2012 12:27 AM Text Document 1 KB
Install 5/25/2012 10:28 AM Windows Batch File 1 KB
logo_advantech 2/15/2012 12:34 AM Bitmap image 19 KB
SignTool 2/9/2010 3:48 AM Application 226 KB

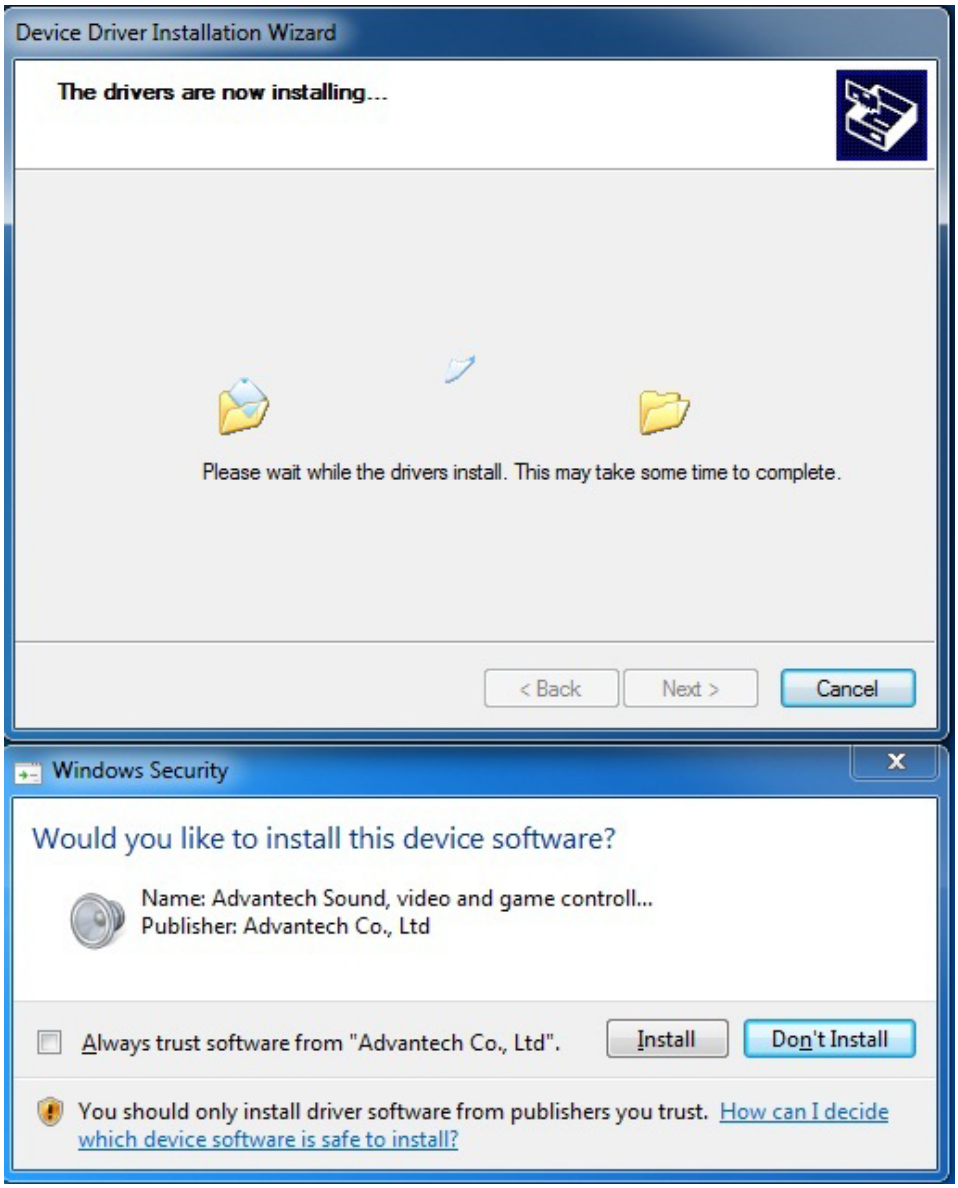
3. Click “Next” when the installation wizard shows.


Advantech DSPC-8661 Device Installer
ADVANTECH
Welcome to Advantech DSPC-8661 Installer!
This wizard will walk you through updating the drivers for your DSPC-8661 device.
To continue, click Next.
< Back
Next >
Cancel

4. Choose “Agree” and click “Next” on EULA step.


Advantech DSPC-8661 Device Installer
End User License Agreement
To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.
Text
I accept this EULA
I do not accept this EULA
Save As
Print
< Back
Next >
Cancel

5. The will show windows Security message, click “Install”. The driver wizard proceeds to install.


Device Driver Installation Wizard
The drivers are now installing...
Please wait while the drivers install. This may take some time to complete.
< Back
Next >
Cancel
Windows Security
Would you like to install this device software?
Name: Advantech Sound, video and game controll...
Publisher: Advantech Co., Ltd
Always trust software from "Advantech Co., Ltd".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

6. When the installation successfully completed, click “Finish” to end the installation.

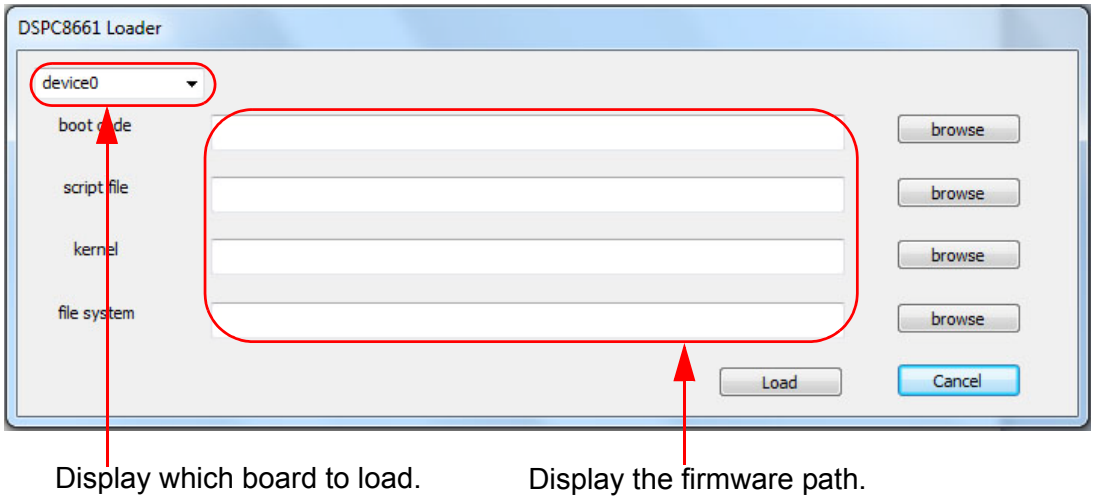
Chapter 4

Firmware Loader for Windows

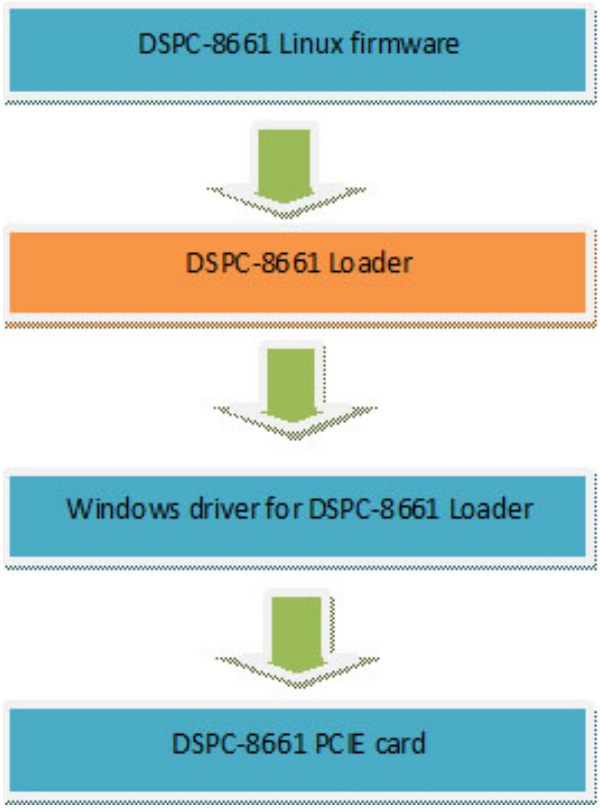
"Dspc8661loader" is a specific application, which is designed to load the Linux firmware into the device DSPC-8661 and active it under Windows environment. If there is any need to load different versions of firmware, you can use this tool to achieve it. The application can also load the firmware into the multiple boards. Notice that the firmware can be loaded only one time after rebooting the PC.

Note! *For developing DSPC-8661 firmware, we suggest the developers to download the Linux EZ Software Development Kit (EZSDK) for DaVinci DM816X Video Processors in the Texas Instruments (TI) website.*

"Dspc8661loader" looks like as following:



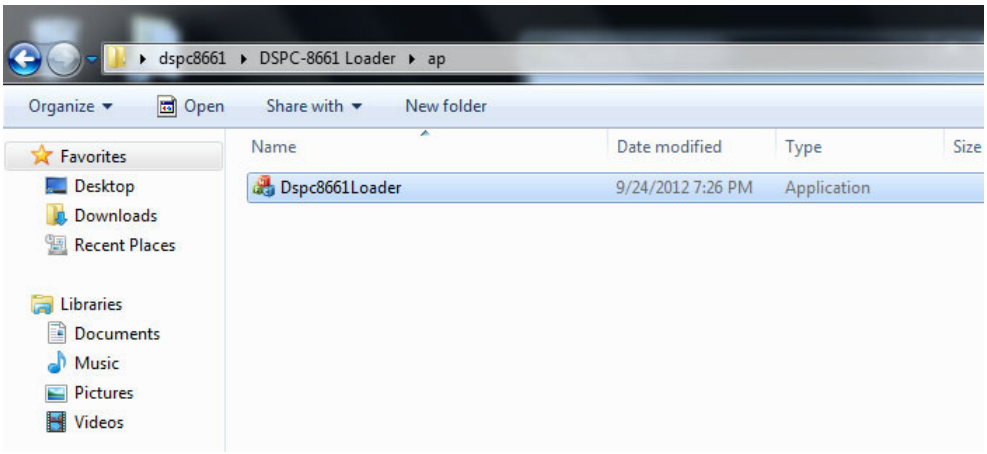
The following is the loading flow:



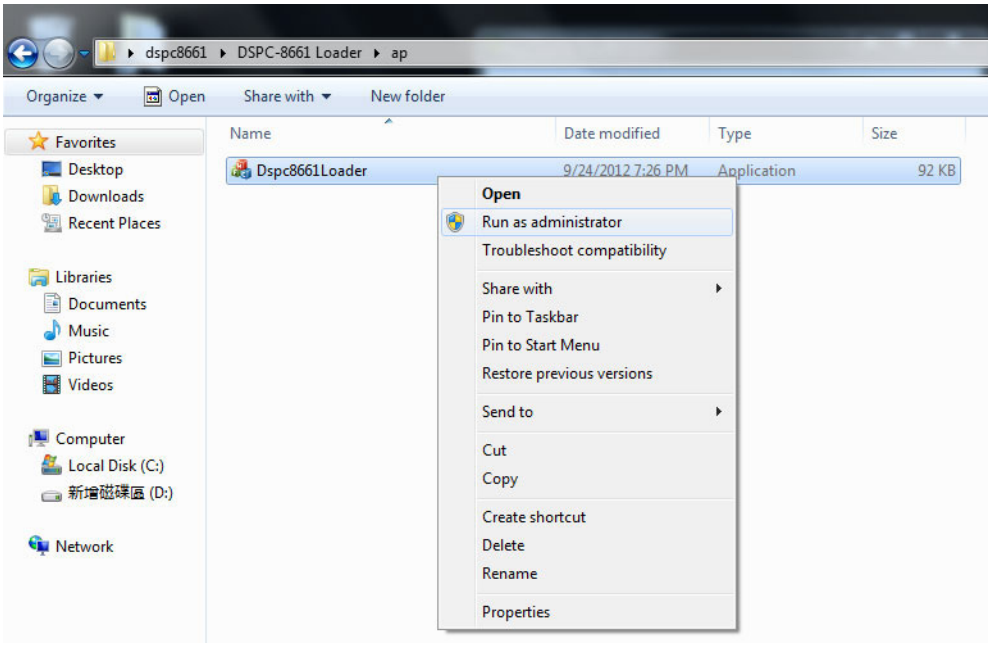
Before starting to use the “Dspc8661loader”, install the specific driver and the Microsoft application “vcredist_x862008sp1.exe” first. The driver is located in the folder “DSPC-8661 Loader\driver”, and the Microsoft application “vcredist _x862008sp1.exe” is located in the folder “DSPC-8661 Loader\application”.

If the driver and the Microsoft application are successfully installed, please refer to the following steps to start to use the application “Dspc8661Loader”.

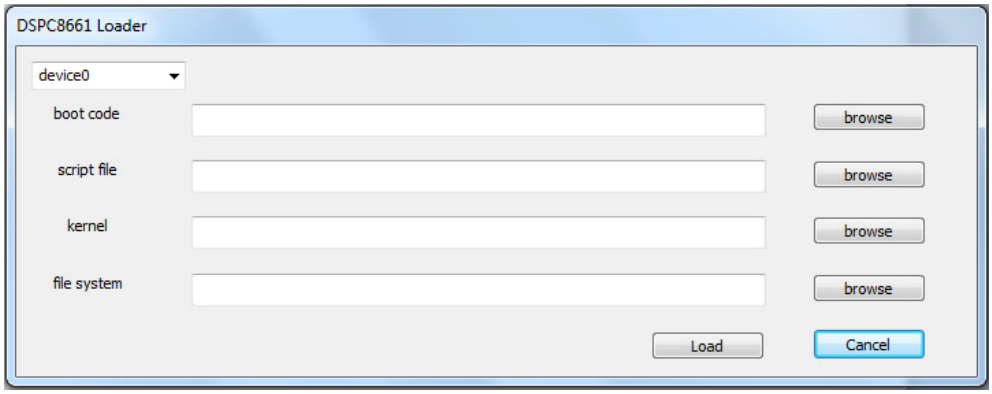
1. Find the application “Dspc8661Loader” in “DSPC-8661 Loader\application”



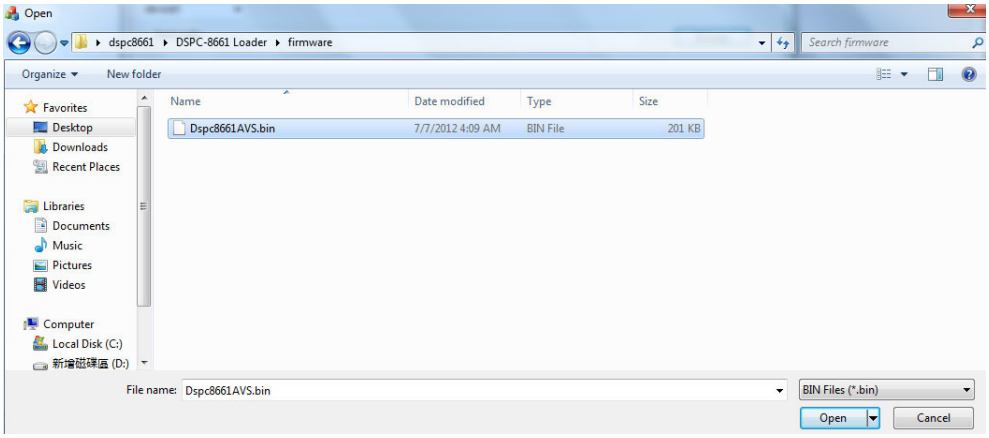
2. Run “Dspc8661Loader” as administrator.



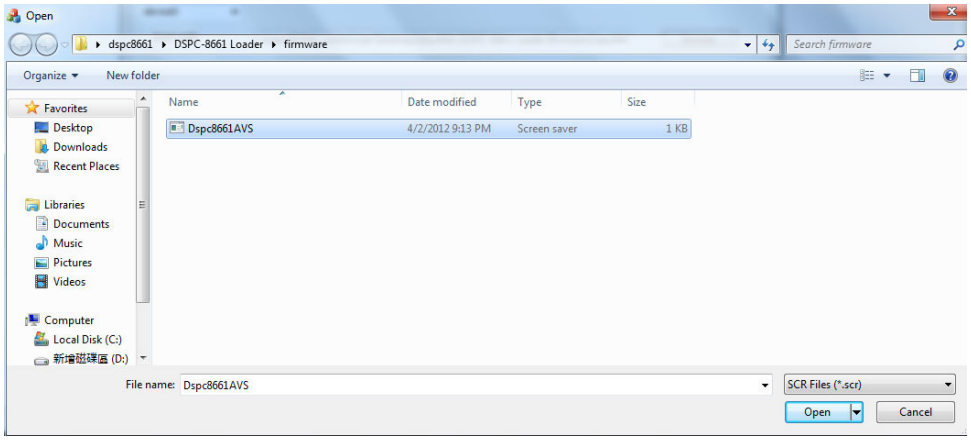
3. Find all the firmware to load.



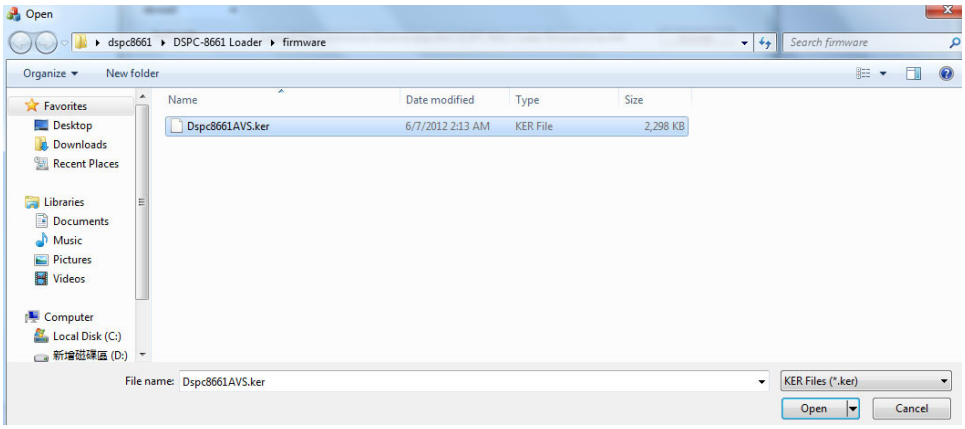
A. Find the firmware *.bin to load.



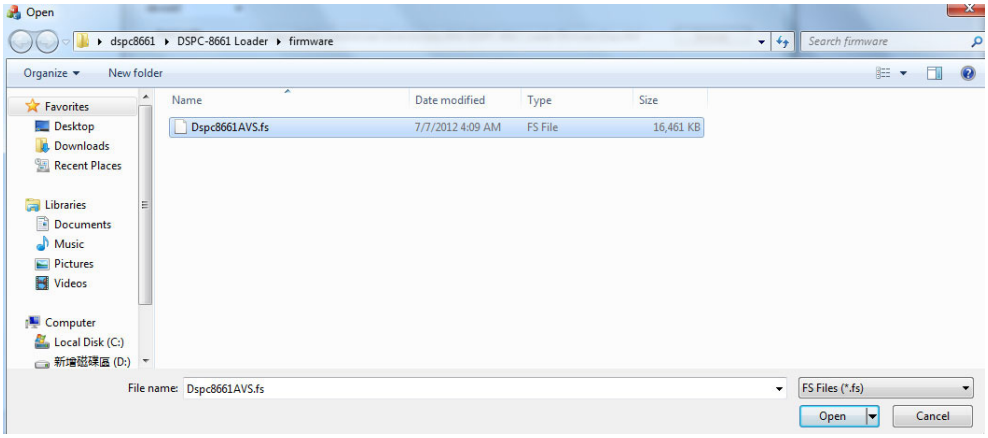
B. Find the firmware *.scr to load



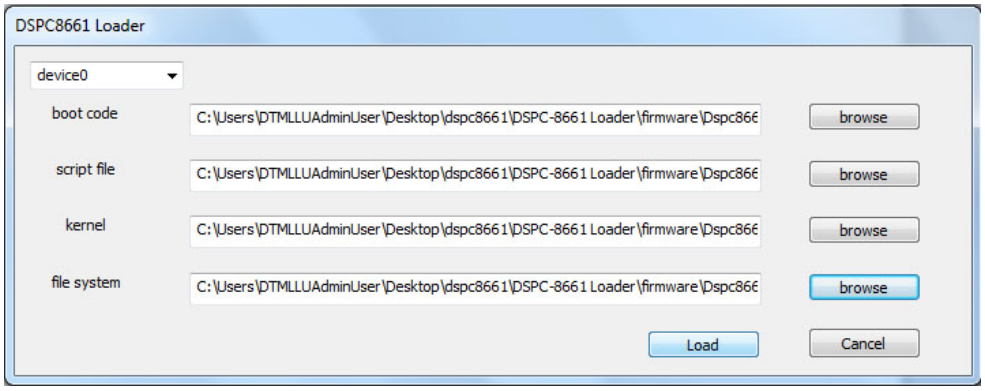
C. Find the firmware *.ker to load.



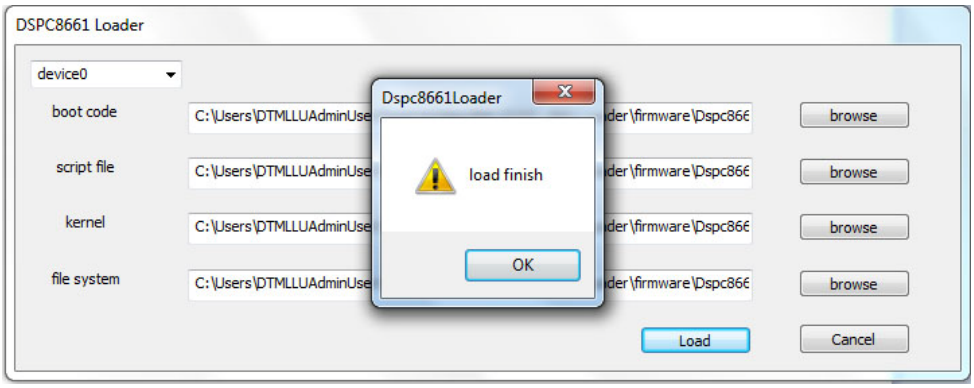
D. Find the firmware *.fs to load



4. Start to load all the firmware by pressing the button “Load”.



5. Wait for about 30 seconds, then message “Load finish” pop up once the loading already finished.



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